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Target Location
Errors Derived from a
Hypothetical Target
Tracking System

Michael A. Crombie

February 1989

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<p>An error analysis of a hypothetical target tracking system developed around an ongoing real-time attitude (RTA) project at the Space Programs Laboratory was performed at the U.S. Army Engineer Topographic Laboratories. An extensive set of tables of target errors was developed as a function of a variety of collection geometries and system component random errors. The target tracking system includes RTA, a real-time positioning capability, an automatic target sensor, and a slant range measuring device. The system components were characterized in the study by their expected random errors. For example, the real-time positioning capability in this study reflects the expected range of GPS errors.</p> <p><i>Robert [unclear] (101)</i></p>					
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PREFACE

This study was conducted under DA Project 4A762707A855, "Topographic Mapping Technology."

The study was conducted during the summer of 1987 under the supervision of Donald R. Barnes, Chief, Space Concepts Division, and Dr. Joseph J. Del Vecchio, Space Programs Laboratory, U.S. Army Engineer Topographic Laboratories.

The author extends special thanks to Ms. Leslie Butera, a summer employee from James Madison University, who assisted with the computer programming.

COL David F. Maune, EN, was Commander and Director, and Mr. Walter E. Boge was Technical Director of the U.S. Army Engineer Topographic Laboratories during the report preparation.



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TARGET LOCATION ERRORS DERIVED FROM A HYPOTHETICAL TARGET TRACKING SYSTEM

INTRODUCTION

This study was performed in support of two ongoing efforts at the Space Programs Laboratory (SPL), U.S. Army Engineer Topographic Laboratories (ETL) -- namely an ETL initiated, U.S. Army Corps of Engineers (USACE) approved, NASA shuttle experiment intended to validate the concept of precision real-time attitude (RTA) keyed to a digital imaging stellar camera -- and a continuing SPL effort entitled "Target Location and Analysis." An expanded concept involving an RTA capability is to combine it with a real-time positioning system, such as the NAVSTAR/Global Positioning System (GPS), to develop a capability for both real-time attitude and positioning (RTAP) or exterior orientation of a space platform. If the initial RTA shuttle experiment is successful, an RTAP concept validation experiment would be pursued as a follow on. If such a capability exists, then the possibility of real-time target location exists. The purpose of this study is to evaluate the performance of a hypothetical target tracker system developed around a real-time exterior orientation system comprised of RTA and GPS.

Two additional components are conceived and combined with RTAP to develop the hypothetical target tracker system. The first component is a device that measures slant range to an object imaged at the principal point of the second component, namely a solid state detector located in the focal plane of an optical system. The hypothetical target tracker system is described in figure 1.

The four components of the target tracker system are specified in this study by their individual random errors rather than by their physical description. For example, two star cameras are depicted in figure 1 to represent the RTA capability. This is not necessarily a complete representation of RTA, since an operational RTA might require argumentation with an inertial component. Nor has it been determined that two star cameras, specifically, will be required. The RTA capability will be realized in this study by expressing resultant random errors from RTA as attitude errors of the optical reference system of the target sensor/camera (TC). The detector type (visual or IR for example) has not been specified, nor has the optical system. Errors in TC are expressed as angular errors in target direction measured in the target camera system. The slant range measuring component (R) is defined only with respect to slant range random errors to the object imaged at the principal point of TC. Four GPS satellites are shown in figure 1, but the GPS performance is defined with respect to an expected range of position errors of the target tracker (P). The origin of P is the instantaneous location of the lens position of TC in the ground coordinate frame (G).

The error results for target location determination presented in appendices H and I pertain to random input errors from the four components of P. Biases caused by inaccurate determination of locking angles between component coordinate frames, inaccurate interior orientation of the several cameras, lack of simultaneity of time determination, and other factors are not analyzed in this study.

- T: Target
- P: Target Tracker System
- GPS: NAVSTAR/GPS Satellite
- SC: Star Camera
- TC: Target Sensor/Camera
- R: Slant Range Detector
- G: Earth-Centered Ground Coordinate Frame

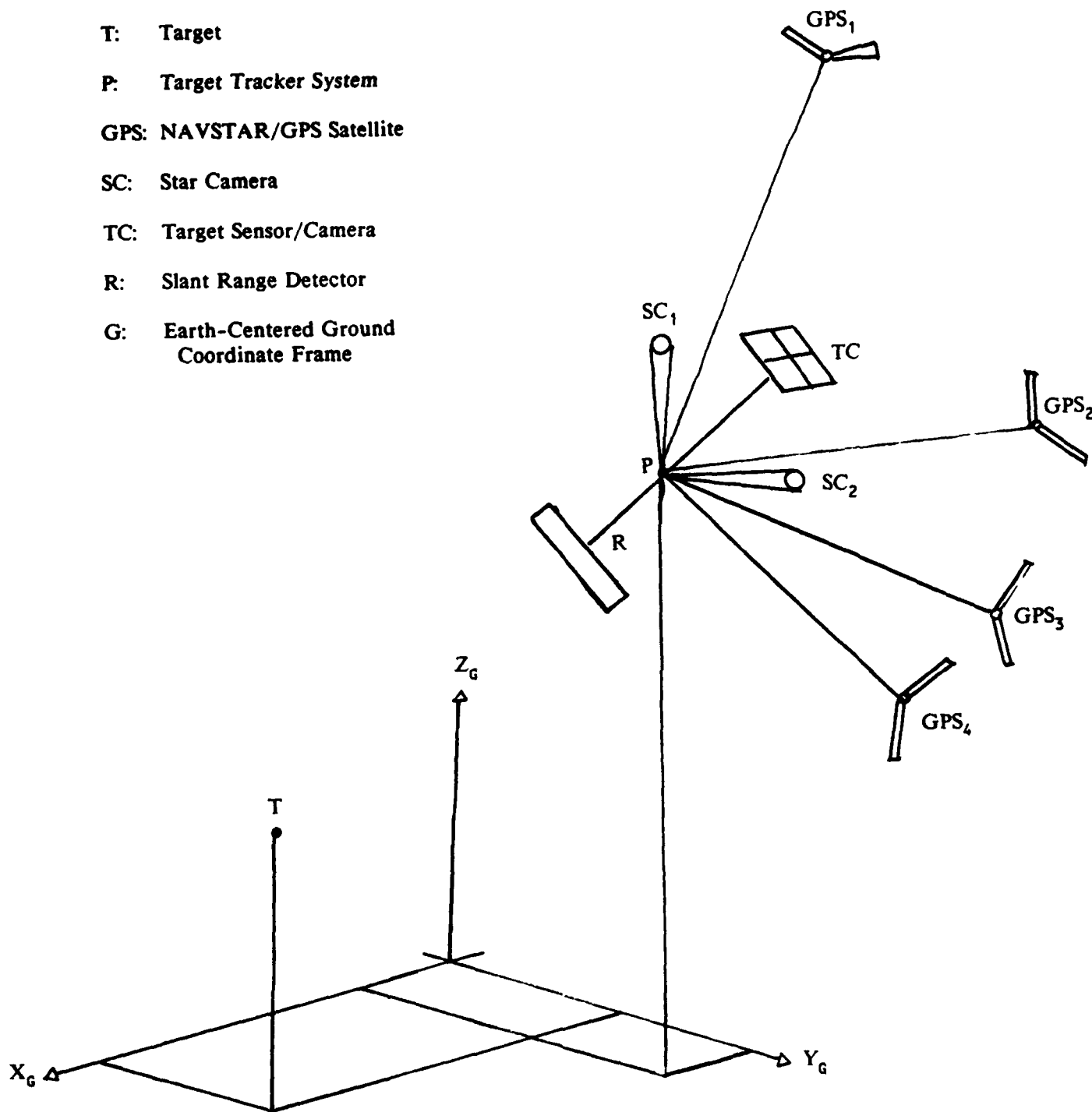


Figure 1. Hypothetical Tracker System.

Mathematical Description of the Error Analysis

The error propagation function provided by the theory of least squares adjustment is used in this study to express expected errors in target determination as functions of input component random errors. The mathematics associated with least squares are described in the appendices to this report. Appendix A develops the basic condition equations for three separate observation modes of Cases I-III. Appendixes B and C address the model simulation and model coordinates generation, respectively. The description of the (3x3) covariance matrix of the adjusted target coordinates is given in appendix D. Note that the position coordinates derived from GPS are also treated as parameters to be adjusted. The associated weight matrix for the several (up to 5) tracker positions is described in appendix E. One reason for doing this is so that the Case I observation mode will be weighted only with respect to errors in the observed measurement, namely the slant range error variance. The slant range observation is described in equation 1 of appendix A.

Another reason for treating the several target tracker positions as weighted parameters is so that the Case II observation mode weight will be independent of GPS errors. The Case II mode, namely direction to the target from P, is described in equation 2 of appendix A. An argument could be made for treating the Case II observation in the same manner as the Case I observation by regarding the RTA input (3 angles of exterior orientation) to the attitude of TC in G as parameters to be adjusted. In this way, the Case II observation weight would depend only on the target coordinate measuring errors and would be independent of the RTA attitude errors. Note that the target coordinate measuring errors are errors in X_t/f and Y_t/f , where (X_t, Y_t) are the target coordinates and f is the focal length of the optical system. Thus, the target coordinate errors noted as target errors in the tables of appendix H are regarded as angular errors in the X and Y directions, respectively. The main reason for not treating RTA input as weighted parameters was to reduce the size of the required matrix inversion. For example, if the target was observed by five target trackers, then a (33x33) matrix must be developed and inverted instead of an (18x18) matrix.

Least squares adjustment requires an overdetermined linear system of equations as input. Since the observation equations labeled Case I and Case II are nonlinear in the unknown parameters, a "linearized" approximation to the observation equations is employed. The approximation and the associated contribution to the inverse of the required covariance matrix is given in appendix F for Case I, and in appendix G for Case II.

Target location errors are heavily dependent on collection geometry as well as on random input measuring errors. For example, errors in target location increase as distance to the target increases in Case II and Case III. Case III is the mode where slant range and direction to the target are both measured. Case III pertains when the four components of the hypothetical target tracker are employed. On the other hand, if slant range to the target only is used (3 of more Case I observations), then target error is not dependent on distance to the target. If two or more observations are made on a target, then the relative position of the two or more target trackers with respect to one another and with respect to the target greatly influences target precision. Generally, as the angle between target trackers as measured from the target increases, then target precision increases. Symmetric geometric models described in appendix C were used for this error analysis. The models are such that each target tracker is the same distance from the target and adjacent target trackers make the same angle with respect to the target. The user of the error analysis results given in appendix H and I should be aware of the associated collection geometry and should not extend error predictions beyond the input error set, nor beyond the collection system configurations.

The error results given in appendixes H and I are 99 percent confidence sphere radii derived from the (3x3) target covariance matrices. The average value of the trace of the covariance matrix was used to generate the 99 percent confidence radius. Two assumptions lay behind this calculation. The first is that the input random errors are normally distributed variables. The second assumption is that, in general, the collection geometry is such that neither of the three coordinate errors can be expected to be smaller or larger than the other two. Then if σ^2 is the average value of the trace, then $(\Delta x^2 + \Delta y^2 + \Delta z^2)/\sigma^2 = R^2/\sigma^2$ is a chi square variate with 3 degrees of freedom. The confidence sphere radius is derived from the following probability statement

$$\text{Prob}(R^2/\sigma^2 < \chi^2_{3,\gamma}) = \gamma$$

where γ is the required confidence value. Tabular entries in appendix H and I are 99 percent confidence sphere radii in meters. Means to convert the tabulated values to other values of γ are given in the appendix.

Numerical Runs

A series of computer runs was performed to generate the target location errors shown in the 17 tables in appendix H, and the 3 tables in appendix I. The tables in appendix I pertain to range only observations (Case I), whereas those in appendix H pertain to Case II and Case III modes. In each of the tables, whenever pertinent, the error and geometric variables vary according to the following:

Target Errors (Arc Seconds)	1.0, 2.0, 3.0, 4.0, 5.0
Attitude Errors (Arc Seconds)	0.5, 1.0, 2.0, 3.0
Slant Range Errors (Meters)	10.0, 15.0, 20.0
Position Errors (Meters)	1.0, 5.0, 10.0, 15.0
Distance (Meters/ 10^6)	0.5, 1.0, 2.5, 5.0, 7.5, 10.0, 12.5, 15.0
Separation Angle (Degrees)	15.0, 30.0, 45.0, 75.0

There are several exceptions to the above. Target errors in table H-1 were extended to include: 10.0, 15.0, 20.0, 25.0, and 30.0 seconds of arc. A 60.0 degree separation angle was added to the list of tables I-1, I-2, and I-3. A separation angle is the angular distance between adjacent target trackers.

The tables in appendix I are organized by an additional parameter, namely k , the correlation factor described in appendix E. As k increases to 1.0 and as the slant range error approaches 0.0, the target coordinate error approaches the GPS error. This can be visualized by considering the rigid figure comprised of the target at a vertex and the several target trackers equal distance from the target, where adjacent target trackers are equal distance from one another. If the individual target tracker covariance matrices are equal and if they are 100 percent positively correlated with one another, then since the position error is the

only error in the system, the rigid figure will be shifted in G by exactly the GPS error. This means the target error is equal to the GPS error.

Generally, as k increases to 1.0 the target errors either remain the same or decrease. This generality is true for table I-1 where there are no degrees of freedom in the least squares adjustment. However, the results in table I-2 show that when there is one degree of freedom, the target errors increase or remain the same when the separation angle is 60 degrees and 75 degrees. In table I-3 where there are two degrees of freedom, the target errors increase or remain the same when the separation angle is 45 degrees and 60 degrees. There are no results for a separation angle of 75 degrees since it is impossible to have a separation angle larger than 72 degrees in a pentagon model.

The tables can be used in any number of ways to display expected errors. For example, suppose the SEP (50% confidence-radius) is required for the following set of input errors and geometric parameters as the Case III observation mode varies over 2, 3, and 4 trackers.

Separation Angle:	30 degrees
Distance:	2500 kilometers
Target Error:	2 seconds
Attitude Error:	1 second
Slant Range Error:	15 meters
GPS Error:	5 meters

The 99 percent confidence radii are found in tables H-3, H-7, and H-11. A distance of 2500 kilometers translates to a value of 2.5 under the heading DIST. The 99 percent confidence radii are taken directly from the tables and are 58, 47, 40, meters respectively. Each of these values must be multiplied by 0.4566 (See appendix H) to obtain the 50 percent confidence radii, with the results of 26.5, 21.5 and 18.3 meters respectively.

Discussion

The primary reason for this work was to develop an extensive set of target location error tables so that the impact of an RTAP system on target determination could be assessed. A hypothetical target tracker system was conceived with which a variety of geometric configurations, a large error set, and several observational modes were processed to produce target errors. The various target tracker possibilities will not be evaluated in this study.

As was noted in the introduction, biases among the various components were not considered, nor were environmental distortions such as optical and microwave refraction considered. The tables must be used in the same spirit with which they were developed, namely in an ideal geometric world where random errors are independent and normally distributed. The operational modes were developed requiring simultaneity of observation with no concern for the complex communication and coordination problems such observation modes would create. Again, the purpose for the work was to present tables of target errors for subsequent analyses. The prudent user of the tables can interpolate among

parameters within the tables with some confidence, but he must extrapolate beyond the error bounds and beyond the geometric models at his own risk.

Targets in this study were generally regarded as moving targets, hence the stated requirement of simultaneity of observation. There is no reason why the tables cannot be used to evaluate observations taken at different times on fixed targets as long as the parameters that define the tables are not exceeded.

Conclusion

Expected three dimensional target errors can be estimated from the error tables by relating proposed targeting systems to the appropriate geometric model used in the analysis.

Appendix A. Basic Condition Equations

Target coordinates at time t are defined by the following expression:

$$\begin{pmatrix} X_T \\ Y_T \\ Z_T \end{pmatrix}_t = \begin{pmatrix} X_{PI} \\ Y_{PI} \\ Z_{PI} \end{pmatrix}_t + D_{It} \begin{pmatrix} U_{PI} \\ V_{PI} \\ W_{PI} \end{pmatrix}_t$$

$(X_T, Y_T, Z_T)_t$: Target coordinates at time t .

$(X_{PI}, Y_{PI}, Z_{PI})_t$: I^{th} target tracker coordinates at time t .

D_{It} : Slant range distance to target from the I^{th} target tracker at time t .

$(U_{PI}, V_{PI}, W_{PI})_t$: Direction cosines of the ray between the target and the I^{th} target tracker at time t .

$$\begin{pmatrix} U_{PI} \\ V_{PI} \\ W_{PI} \end{pmatrix}_t = M_{PIG_t} \begin{pmatrix} x_t \\ y_t \\ -f \end{pmatrix}_t / l_t ; l_t = (x_t^2 + y_t^2 + f^2)^{1/2}$$

M_{PIG_t} : Rotation matrix relating the I^{th} target tracker reference frame to the ground (G) at time t .

f : Target tracker camera focal distance.

(x_t, y_t) : Image coordinates of target at time t .

Three observation modes are considered in this exercise: Case I, where slant range distance to the target is measured; Case II, where direction to the target is measured; and Case III, where slant range and direction are measured.

Case I

Rewrite the basic equation in the following way:

$$\begin{pmatrix} X_T - X_{PI} \\ Y_T - Y_{PI} \\ Z_T - Z_{PI} \end{pmatrix}_t = D_{It} \begin{pmatrix} U_{PI} \\ V_{PI} \\ W_{PI} \end{pmatrix}_t$$

Perform the vector dot product on both sides of the equation and get

$$(X_T - X_{PI})_t^2 + (Y_T - Y_{PI})_t^2 + (Z_T - Z_{PI})_t^2 = D_{It}^2 \quad (1)$$

Case II

Rewrite the basic equation in the following way:

$$M_{PIG_t}^T \begin{pmatrix} X_T - X_{PI} \\ Y_T - Y_{PI} \\ Z_T - Z_{PI} \end{pmatrix} \frac{1}{D_{It}} = \begin{pmatrix} x_t \\ y_t \\ -f \end{pmatrix} \frac{1}{l_t}$$

Perform the matrix multiplication and divide the first and second equations by the third equation to remove D_{It} and l_t .

Let $M_{PIG_t} = \{m_{ij} : i = 1,3; j = 1,3\}$

Note that for convenience, subscript I has been dropped from the matrix elements.

$$\begin{aligned} \frac{m_{11}(X_T - X_{PI}) + m_{21}(Y_T - Y_{PI}) + m_{31}(Z_T - Z_{PI})}{m_{13}(X_T - X_{PI}) + m_{23}(Y_T - Y_{PI}) + m_{33}(Z_T - Z_{PI})} &= -x_{t/f} \\ \frac{m_{12}(X_T - X_{PI}) + m_{22}(Y_T - Y_{PI}) + m_{32}(Z_T - Z_{PI})}{m_{13}(X_T - X_{PI}) + m_{23}(Y_T - Y_{PI}) + m_{33}(Z_T - Z_{PI})} &= -y_{t/f} \end{aligned} \quad (2)$$

Case III

Equations 1 and 2 pertain here.

In Case I, where only slant range is measured, $I \geq 3$. In Case II, where only direction is measured, $I \geq 2$. In Case III, where slant range and direction are measured, $I \geq 1$.

Appendix B. Model Simulation

The orthogonal rotation matrix relating the I^{th} target to the ground frame (G) is derived next. The matrix construction is performed in the following steps:

Step 1: Choose target and target tracker coordinates.

$$T = (X_T, Y_T, Z_T)$$

$$P = (X_P, Y_P, Z_P)$$

Step 2: Compute $D = |T - P|$

Step 3: Set $X_t = Y_t = 0$, i.e. the target tracker optical axis is directed toward the target.

Step 4: Let M_{PIG} be defined by the fundamental angles roll (ω), pitch (ρ) and yaw (K).

$$\text{Let } (\epsilon_1, \epsilon_2, \epsilon_3) = [(X_T - X_P), (Y_T - Y_P), (Z_T - Z_P)]^1 / D$$

then

$$M_{PIG}^T \begin{pmatrix} \epsilon_1 \\ \epsilon_2 \\ \epsilon_3 \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \\ -1 \end{pmatrix}$$

The relation is true since the target camera optical axis is directed toward the target, then

$$\begin{pmatrix} \epsilon_1 \\ \epsilon_2 \\ \epsilon_3 \end{pmatrix} = M_{PIG} \begin{pmatrix} 0 \\ 0 \\ 1 \end{pmatrix}$$

$$\text{and } (\epsilon_1, \epsilon_2, \epsilon_3) = -(m_{13}, m_{23}, m_{33}).$$

The orientation matrix is now fixed except for a yaw angle rotation about the optical axis. Let $K = 180^\circ$, then

$$M_{PIG} = \begin{bmatrix} \epsilon_3/Q & \epsilon_2\epsilon_1/Q & \epsilon_1 \\ 0 & -Q & \epsilon_2/Q \\ \epsilon_1/Q & -\epsilon_2\epsilon_3/Q & -\epsilon_3/Q \end{bmatrix}$$

$$Q = (1 - \epsilon_2^2)^{1/2}$$

Appendix C. Generation of Model Coordinates

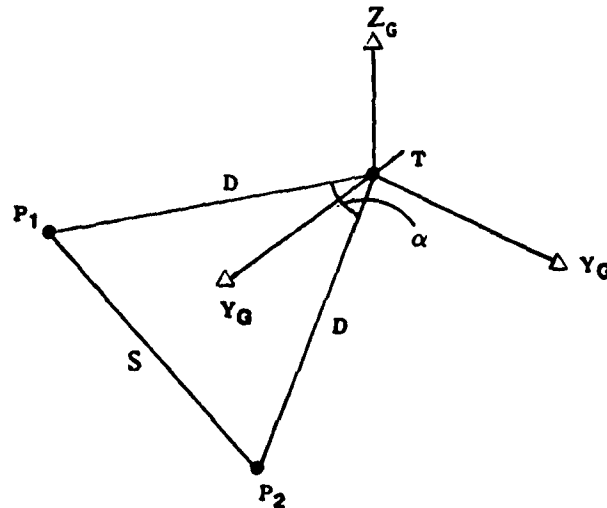
Five geometric models are developed to simulate the five situations of 1, 2, 3, 4, or 5 target trackers symmetrically placed with respect to the target. The geometry is such that each target tracker is D from the target and such that adjacent target trackers are S from one another.

One Target Tracker

In this case $X_T = Y_T = Z_T = 0$ and also $Y_P = Z_P = 0$. $X_P = D$

Two Target Trackers

The configuration is described in the following diagram:



The angle α is chosen and the value of S is

$$S = D (2 - 2 \cos \alpha)^{1/2}$$

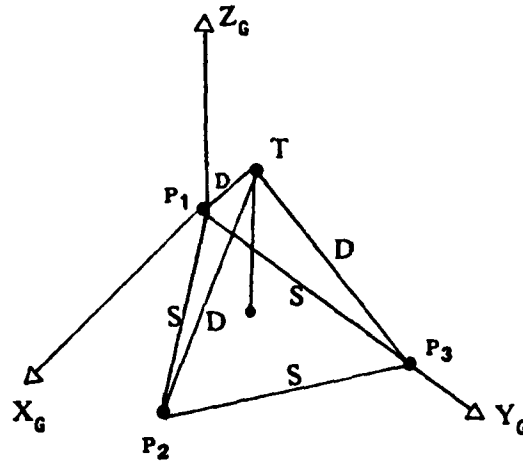
$$T : (0, 0, 0)$$

$$P_1 : (D \cos \alpha/2, -D \sin \alpha/2, 0)$$

$$P_2 : (D \cos \alpha/2, D \sin \alpha/2, 0)$$

Three Target Trackers

The configuration is described in the following diagram:



$$T: \left[-\frac{\sqrt{3}S}{6}, S/2, (D^2 - S^2/3)^{1/2} \right]$$

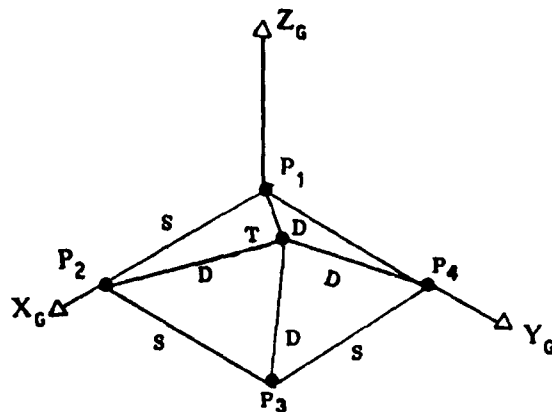
$$P_1: (0, 0, 0)$$

$$P_2: \left(-\frac{\sqrt{3}S}{2}, S/2, 0 \right)$$

$$P_3: (0, S, 0)$$

Four Target Trackers.

The configuration is described in the following diagram:



$$T: \quad [S/2, S/2, (D^2 - S^2/2)^{1/2}]$$

$$P_1: \quad (0, 0, 0)$$

$$P_2: \quad (S, 0, 0)$$

$$P_3: \quad (S, S, 0)$$

$$P_4: \quad (0, S, 0)$$

Five Target Trackers.

The five target trackers form a pentagon around the origin.

$$T: \quad [0, 0, (D^2 - Q^2)^{1/2}]$$

$$P_1: \quad (0, Q, 0)$$

$$P_2: \quad (-Q \sin \delta, Q \cos \delta, 0)$$

$$P_3: \quad (-Q \sin \delta/2, -Q \cos \delta/2, 0)$$

$$P_4: \quad (Q \sin \delta/2, -Q \cos \delta/2, 0)$$

$$P_5: \quad (Q \sin \delta, Q \cos \delta, 0)$$

$$\delta = 72^\circ$$

$$Q = S/[2(1 - \cos \delta)]^{1/2}$$

Appendix D. Error Propagation.

The objective of the work is to propagate errors in target tracker position and attitude measurements, target tracker coordinate errors, and target tracker slant range errors into adjusted target coordinate errors. This will be done by regarding the target tracker positions as weighted parameters and by assuming that the other measurements contain random errors only, that is, distortions caused by constant biases are not considered. The (3x3) covariance matrix of the adjusted target coordinates will be the upper (3x3) matrix of the $[3(K+1) \times 3(K+1)]$ covariance matrix of the adjusted parameters derived by least squares methodology. There are $1 \leq K \leq 5$ target trackers for any one situation. The general form of the covariance matrix is given next.

$$\sum_{T,P}^{-1} = \begin{bmatrix} \sum_{I=1}^K R_I & -R_1 & -R_2 & \dots & -R_K \\ -R_1 & R_1 & \phi & \dots & \phi \\ -R_2 & \phi & R_2 & \dots & \phi \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ -R_K & \phi & \phi & \dots & R_K \end{bmatrix} + W_P^{-1} \quad (1)$$

$\sum_{T,P}$ is the desired $[3(K+1) \times 3(K+1)]$ covariance matrix.

$$W_P^{-1} = \begin{pmatrix} \phi & \Theta \\ \Theta^T & W_P \end{pmatrix}$$

ϕ : (3x3) matrix of zeros

Θ : (3x3K) matrix of zeros

W_P : (3Kx3K) weight matrix. W_P is defined in Appendix E.

R_I : (3x3) contribution to the covariance matrix from the I^{th} target tracker.

The contents of R_I depend on the kind of observation, i.e. Case I, Case II, or Case III. R_I for Case I is defined in appendix F and R_I for Case II is defined in appendix G. R_I for Case III is the sum of the Case I and Case II contributions.

Appendix E. Target Tracker Coordinate Weight Matrix

The covariance matrix of the 3K target tracker coordinates is assumed to take the following form:

$$\Sigma_p = \begin{bmatrix} \sigma_p & k\sigma_p & \dots & k\sigma_p \\ k\sigma_p & \sigma_p & \dots & k\sigma_p \\ \vdots & \vdots & \ddots & \vdots \\ k\sigma_p & k\sigma_p & \dots & \sigma_p \end{bmatrix}$$

where

σ_p is a (3x3) covariance matrix of position derived directly from GPS error predictions.

$$-1 < k < 1$$

$$\Sigma_p \text{ is } (3K \times 3K)$$

The target tracker coordinate weight matrix is

$$W_p = \Sigma_p^{-1}$$

$$W_p = \begin{bmatrix} \gamma\sigma_p^{-1} & \xi\sigma_p^{-1} & \xi\sigma_p^{-1} & \dots & \xi\sigma_p^{-1} \\ \xi\sigma_p^{-1} & \gamma\sigma_p^{-1} & \xi\sigma_p^{-1} & \dots & \xi\sigma_p^{-1} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ \xi\sigma_p^{-1} & \xi\sigma_p^{-1} & \xi\sigma_p^{-1} & \dots & \gamma\sigma_p^{-1} \end{bmatrix}$$

where

$$\gamma = \frac{1 + (K - 2)k}{(1 - k)[1 + (K - 1)k]}$$

$$\xi = \frac{-k}{(1 - k)[1 + (K - 1)k]}$$

The matrix inversion result can be verified by multiplying W_p by Σ_p and getting I_{3K} .

Appendix F. Contribution to the Normal System Coefficient Matrix for Case I

From equation 1 of appendix A, the condition equation for Case I is

$$(X_T - X_p)^2 + (Y_T - Y_p)^2 + (Z_T - Z_p)^2 = D_{TP}^2$$

Note that the subscripts "I" and "t" have been dropped for convenience. Regard the three target coordinates T as free parameters to be adjusted and regard the three target tracker coordinates p as weighted parameters. The weight matrix is specified in appendix E, and its relation to the normal system coefficient matrix is specific in appendix D.

The linear approximation of the condition equation is

$$\beta \begin{bmatrix} \Delta X_T \\ \Delta Y_T \\ \Delta Z_T \end{bmatrix} - \beta \begin{bmatrix} \Delta X_p \\ \Delta Y_p \\ \Delta Z_p \end{bmatrix} - \Delta D_{TP} = 0$$

where

$$\beta = \left[\frac{X_T - X_p}{D_{TP}}, \quad \frac{Y_T - Y_p}{D_{TP}}, \quad \frac{Z_T - Z_p}{D_{TP}} \right]$$

ΔD_{TP} : unknown random slant range error.

Suppose K target trackers made slant range measurements to the target. If the target is fixed in G, e.g. a non-moving ground target, then the observations can be made at different times. If the target is moving G, then the K observations must be simultaneous. In any case, the K observations are represented by

$$\begin{bmatrix} \beta_1 & -\beta_1 & & \\ \beta_2 & & -\beta_2 & \\ \cdot & & & \cdot \\ \cdot & & & \\ \cdot & & & \\ \beta_K & & & -\beta_K \end{bmatrix} \begin{bmatrix} \Delta T \\ \Delta P_1 \\ \Delta P_2 \\ \cdot \\ \cdot \\ \Delta P_K \end{bmatrix} = \begin{bmatrix} \Delta R_1 \\ \Delta R_2 \\ \cdot \\ \cdot \\ \cdot \\ \Delta R_K \end{bmatrix}$$

[K x 3 (K+1)] [3(K+1)x1] [Kx1]

The slant range observations are assumed to be independent with a common variance σ_R^2 . The weight matrix for the set of K slant range measurements is $1/\sigma_R^2 I_K$. If B represents the $[K \times 3 (K+1)]$ matrix defined above, then the contribution to the normal system coefficient matrix is $B^T (\frac{1}{\sigma_R^2} I_K) B$ or

$$\begin{bmatrix} \frac{1}{\sigma_R^2} \sum_{i=1}^K \beta_i^T \beta_i & -\frac{1}{\sigma_R^2} \beta_1^T \beta_1 & \dots & -\frac{1}{\sigma_R^2} \beta_K^T \beta_K \\ -\frac{1}{\sigma_R^2} \beta_1^T \beta_1 & \frac{1}{\sigma_R^2} \beta_1^T \beta_1 & \dots & \phi \\ \vdots & \vdots & \ddots & \vdots \\ -\frac{1}{\sigma_R^2} \beta_K^T \beta_K & \phi & \dots & \frac{1}{\sigma_R^2} \beta_K^T \beta_K \end{bmatrix}$$

ϕ : (3×3) matrix of zeros.

From equation 1 of appendix D the matrix R_1 is

$$R_1 = \frac{1}{\sigma_R^2} \beta_1^T \beta_1$$

Appendix G. Contribution to the Normal System Coefficient Matrix for Case II

From equation 2 of appendix A the condition equations for Case II are

$$F = \frac{m_{11}(X_T - X_P) + m_{21}(Y_T - Y_P) + m_{31}(Z_T - Z_P)}{m_{13}(X_T - X_P) + m_{23}(Y_T - Y_P) + m_{33}(Z_T - Z_P)} + x/f = 0$$

$$H = \frac{m_{12}(X_T - X_P) + m_{22}(Y_T - Y_P) + m_{32}(Z_T - Z_P)}{m_{13}(X_T - X_P) + m_{23}(Y_T - Y_P) + m_{33}(Z_T - Z_P)} + y/f = 0$$

Note that the subscripts "T" and "t" have been dropped for convenience. Regard the three target coordinates T as free parameters to be adjusted and regard the three target trackers coordinates P as weighted parameters. The weight matrix associated with P is specified in appendix E and its relation to the normal system coefficient matrix is specified in appendix D.

The linear approximation of the condition equations for Case II is

$$\begin{aligned} \frac{\delta(F,H)}{\delta(x,y)} \begin{pmatrix} \Delta x \\ \Delta y \end{pmatrix} + \frac{\delta(F,H)}{\delta(\omega, \rho, K)} \begin{pmatrix} \Delta \omega \\ \Delta \rho \\ \Delta K \end{pmatrix} + \frac{\delta(F,H)}{\delta(X_T, Y_T, Z_T)} \begin{pmatrix} \Delta X_T \\ \Delta Y_T \\ \Delta Z_T \end{pmatrix} \\ + \frac{\delta(F,H)}{\delta(X_P, Y_P, Z_P)} \begin{pmatrix} \Delta X_P \\ \Delta Y_P \\ \Delta Z_P \end{pmatrix} = \begin{pmatrix} 0 \\ 0 \end{pmatrix} \end{aligned}$$

From appendix A

$$\frac{\delta(F,H)}{\delta(x,y)} = \frac{1}{f} I_2$$

$$\frac{\delta(F,H)}{\delta(\omega, \rho, K)} = f \begin{pmatrix} 0 & Q & -\epsilon_1 \epsilon_2 / Q \\ -1 & 0 & -1/Q \end{pmatrix} = B$$

$$Q = (1 - \epsilon_2^2)^{\frac{1}{2}}$$

$$\frac{\delta(F,H)}{\delta(X_T, Y_T, Z_T)} = \frac{f}{D_{Tp}} \begin{pmatrix} \epsilon_3/Q & 0 & -\epsilon_1/Q \\ \epsilon_1 \epsilon_2 / Q & -Q & \epsilon_2 \epsilon_3 / Q \end{pmatrix} = C$$

$$\frac{\delta(F,H)}{\delta(X_P, Y_P, Z_P)} = - \frac{\delta(F,H)}{\delta(X_T, Y_T, Z_T)}$$

$(\Delta x, \Delta y)$: Unknown random target image point measuring errors

$(\Delta \omega, \Delta \rho, \Delta K)$: Unknown random attitude errors

The weight matrix for the pair of observation is ω , where

$$\omega^{-1} = \begin{pmatrix} \frac{1}{f^2} I_2 & B \\ \phi^T & \sigma_a \end{pmatrix} \begin{pmatrix} \frac{1}{f^2} I_2 \\ B^T \end{pmatrix}$$

σ_o : (2x2) covariance matrix of (x, y)

σ_a : (3x3) covariance matrix of (ω, ρ, K)

ϕ : (2x3) matrix of zeros

$$\omega = \left[\frac{1}{f^2} \sigma_o + B \sigma_a B^T \right]^{-1}$$

Suppose K target trackers made direction to target measurements. If the target is fixed in G , e.g. a non-moving target, then the observations can be made at different times. If the target is moving in G , then the K observations must be simultaneous. In any case, the K observations are represented by

$$\begin{bmatrix} C_1 & -C_1 & & & \\ C_2 & & -C_2 & & \\ \vdots & & & \ddots & \\ C_K & & & & -C_K \end{bmatrix} \begin{bmatrix} \Delta T \\ \Delta P_1 \\ \vdots \\ \Delta P_K \end{bmatrix} = \begin{bmatrix} \Delta L_1 \\ \Delta L_2 \\ \vdots \\ \Delta L_K \end{bmatrix}$$

[2K x 3(K+1)] [3(K+1) x 1] [2K x 1]

$$L_k = \frac{\delta(F, H)_k}{\delta(x_k, y_k)} \begin{pmatrix} \Delta x_k \\ \Delta y_k \end{pmatrix} + \frac{\delta(F, H)_k}{\delta(\omega_k, \rho_k, K_k)} \begin{pmatrix} \Delta \omega_k \\ \Delta \rho_k \\ \Delta K_k \end{pmatrix}$$

The set of target measurements are assumed to be independent from the attitude measurements; also the target measurements over target trackers as well as the attitude measurements over target trackers are assumed to be independent. These assumptions lead to a $(K \times K)$ diagonal weight matrix where the I^{th} diagonal element is

$$\omega_I = \left[\frac{1}{f^2} \sigma_o + B_I \sigma_{a_I} B_I^T \right]^{-1}$$

If C represents the $[2K \times 3(K+1)]$ matrix defined above, then the contribution to the normal system coefficient matrix is $C^T [\text{Diag}(\omega_i)] C$, or

$$\begin{bmatrix} \sum_{i=1}^K C_i^T \omega_i C_i & C_1^T \omega_1 C_1 & . & . & . & -C_K^T \omega_K C_K \\ -C_1^T \omega_1 C_1 & C_1^T \omega_1 C_1 & . & . & . & \phi \\ . & . & . & . & . & . \\ . & . & . & . & . & . \\ . & . & . & . & . & . \\ -C_K^T \omega_K C_K & \phi & . & . & . & -C_K^T \omega_K C_K \end{bmatrix}$$

ϕ : (3×3) matrix of zeros

From equation 1 of appendix D the matrix R_i is

$$R_i = C_i^T \omega_i C_i$$

Appendix H. Target Location Errors

Case II and Case III results are presented in this appendix. Tabular entries are 99 percent confidence sphere radii in meters specified by observational mode and by input error description. The integer values enclosed in parentheses in each of the titles pertain to observational mode. For example, (1, 1, 1) implies 3 Case III target trackers, while (2, 2) implies 2 Case II target trackers. Case II and Case III observational modes are defined below:

1. Case III

- a. Target coordinates measured in the focal plane of the target sensor.
- b. Target tracker position coordinates measured, for example, by GPS. In fact, the position errors are labeled GPS errors.
- c. Target tracker attitude coordinates measured, for example, by a Real-Time Attitude Sensor System. Attitude errors are labeled SIGA.
- d. Slant range distance to the target from the target tracker measured by a ranging device. Slant range errors are labeled SIGR.

2. Case II

All of the above except d.

The second set of numbers in the title defines the angular distance between adjacent target trackers with respect to the target. Note that when there is only one target tracker, then it must be a Case III observation and there is no angle description.

Values listed under the heading "DIST" pertain to slant range distances to the target from the target trackers. Multiply those values by 10^6 to express the slant range in meters.

Tabular entries are 99 percent confidence sphere radii. If other confidence sphere radii are required, then perform the appropriate calculation.

$$50\% \text{ Confidence Sphere Radii} = 0.4566 * S$$

$$90\% \text{ Confidence Sphere Radii} = 0.7423 * S$$

$$95\% \text{ Confidence Sphere Radii} = 0.8300 * S$$

where S is the 99% confidence value in meters.

TABLE H-1 (1)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	21	22	27	32	30	31	34	39	40	40	43	47
1.0	25	29	40	55	33	36	46	59	42	44	53	64
2.5	44	56	90	128	49	60	93	130	55	66	96	133
5.0	81	107	178	255	84	109	179	256	87	112	181	257
7.5	119	159	265	381	121	161	266	382	124	163	267	383
10.0	158	212	353	508	159	213	354	509	161	214	355	509
12.5	196	264	441	635	198	265	442	635	199	266	443	636
15.0	235	317	530	762	236	318	530	762	238	319	531	763

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	31	36	35	35	38	42	43	44	46	49
1.0	30	33	44	57	37	40	49	61	45	47	55	66
2.5	47	59	92	130	52	63	94	131	58	68	98	134
5.0	82	109	178	255	85	111	180	256	89	114	181	257
7.5	120	160	266	382	122	162	267	382	125	164	268	383
10.0	158	212	354	508	160	214	354	509	162	215	355	509
12.5	197	265	442	635	198	266	442	636	200	267	443	636
15.0	236	317	530	762	237	318	530	762	238	319	531	763

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	40	40	43	46	45	46	48	51	52	53	54	57
1.0	42	44	53	64	47	49	57	68	54	56	62	72
2.5	55	66	96	133	59	69	99	135	65	74	102	137
5.0	87	112	181	257	90	114	182	258	94	117	184	259
7.5	124	163	267	383	125	164	268	383	128	166	270	384
10.0	161	214	355	509	163	216	356	510	165	217	357	510
12.5	199	266	443	636	200	267	443	636	202	269	444	637
15.0	238	319	531	763	239	319	531	763	240	320	532	763

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	55	55	57	60	59	59	61	64	64	65	66	69
1.0	56	58	65	74	60	62	68	77	66	67	73	82
2.5	67	76	104	138	70	79	106	140	75	83	109	142
5.0	95	119	185	260	98	121	186	261	101	123	188	262
7.5	129	167	270	385	131	169	271	385	134	171	272	386
10.0	165	218	357	511	167	219	358	511	169	220	359	512
12.5	203	269	444	637	204	270	445	637	206	271	446	638
15.0	241	321	532	763	242	322	532	764	243	323	533	764

TABLE H-1 (1) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	25	29	34	33	33	36	41	42	42	44	48
1.0	34	37	47	59	41	43	51	63	48	50	58	68
2.5	73	81	107	141	76	84	109	143	80	87	112	145
5.0	141	158	212	280	143	159	213	280	145	161	214	282
7.5	210	235	317	419	211	236	318	419	213	238	319	420
10.0	280	313	422	558	280	314	423	559	282	315	423	559
12.5	349	391	527	697	350	392	528	698	351	393	528	698
15.0	419	469	633	837	419	470	633	837	420	471	634	838

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	30	33	38	37	37	40	44	45	45	47	51
1.0	38	41	49	61	44	46	54	65	51	53	60	70
2.5	74	82	109	142	77	85	111	143	82	89	114	146
5.0	142	158	212	280	143	160	214	281	146	162	215	282
7.5	211	236	317	419	212	237	318	420	213	238	319	420
10.0	280	314	422	558	281	315	423	559	282	316	424	559
12.5	350	392	528	698	350	392	528	698	351	393	529	698
15.0	419	470	633	837	420	470	633	837	420	471	634	838

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	41	42	44	48	47	47	49	53	53	54	56	59
1.0	48	50	57	68	53	54	61	71	59	60	67	76
2.5	80	87	112	145	83	90	114	146	87	94	117	149
5.0	145	161	214	282	146	163	216	282	149	165	217	284
7.5	213	238	319	420	214	239	319	421	215	240	320	421
10.0	282	315	423	559	282	316	424	560	284	317	425	560
12.5	351	393	528	698	351	393	529	699	352	394	530	699
15.0	420	471	634	838	421	471	634	838	421	472	635	838

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	56	56	58	61	60	60	62	65	65	66	67	70
1.0	61	63	69	78	65	66	72	81	70	71	76	85
2.5	88	95	119	150	91	98	121	151	95	101	123	153
5.0	150	165	218	284	151	167	219	285	153	169	220	286
7.5	216	241	321	422	217	242	322	422	219	243	323	423
10.0	284	317	425	560	285	318	426	561	286	319	426	561
12.5	353	395	530	699	353	395	530	700	354	396	531	700
15.0	422	472	635	838	422	473	635	839	423	473	636	839

TABLE H-1 (1) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	29	33	37	36	37	39	43	44	45	47	50
1.0	45	48	55	66	50	52	59	70	57	58	65	74
2.5	104	110	131	159	106	112	132	161	109	115	135	163
5.0	205	217	259	317	206	218	260	318	208	220	261	319
7.5	307	325	388	475	308	325	388	475	309	326	389	476
10.0	409	433	517	633	409	433	517	633	410	434	518	634
12.5	511	540	646	791	511	541	646	791	512	541	647	792
15.0	613	648	775	949	613	649	775	949	614	649	776	949

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	33	34	36	41	39	40	42	46	47	48	50	53
1.0	48	50	58	68	53	55	62	72	59	61	67	76
2.5	105	111	132	160	108	113	133	162	111	116	136	164
5.0	206	218	260	317	207	219	260	318	209	220	262	319
7.5	307	325	388	475	308	326	389	476	309	327	390	476
10.0	409	433	517	633	410	433	518	633	410	434	518	634
12.5	511	541	646	791	511	541	646	791	512	542	647	792
15.0	613	649	775	949	613	649	775	949	614	649	776	950

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	44	45	47	50	49	50	52	55	55	56	58	60
1.0	56	58	65	74	60	62	68	77	66	67	73	82
2.5	109	115	135	163	111	117	137	164	114	120	139	166
5.0	208	220	261	319	209	221	262	319	211	222	263	320
7.5	309	326	389	476	309	327	390	476	311	328	391	477
10.0	410	434	518	634	411	434	518	634	411	435	519	635
12.5	512	541	647	792	512	542	647	792	513	543	648	792
15.0	614	649	776	949	614	650	776	950	615	650	776	950

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	58	58	60	63	62	62	64	66	67	67	69	71
1.0	68	69	75	83	71	73	78	86	76	77	82	90
2.5	116	121	140	167	118	123	142	169	120	125	144	171
5.0	211	223	264	321	212	224	265	322	214	225	266	323
7.5	311	329	391	477	312	329	392	478	313	330	393	479
10.0	412	435	519	635	412	436	520	635	413	437	520	636
12.5	513	543	648	792	514	543	648	793	514	544	649	793
15.0	615	650	776	950	615	651	777	950	616	651	777	951

TABLE H-1 (1) (continued)

TARGET ERROR = 4 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	33	34	37	41	40	41	43	47	47	48	50	53
1.0	57	59	66	75	61	63	69	78	67	68	74	82
2.5	136	141	158	182	138	143	159	183	140	145	161	185
5.0	271	280	313	363	271	280	314	363	273	282	315	364
7.5	405	419	469	544	406	419	470	544	407	420	471	545
10.0	540	558	626	724	540	559	626	725	541	559	627	725
12.5	675	697	782	905	675	698	782	906	676	698	783	906
15.0	810	837	938	1086	810	837	939	1087	810	838	939	1087

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	37	38	41	44	43	44	46	49	50	51	53	56
1.0	60	61	68	77	64	65	71	80	69	70	76	84
2.5	137	142	158	183	139	143	160	184	141	146	162	186
5.0	271	280	314	363	272	281	315	364	273	282	316	365
7.5	405	419	470	544	406	420	470	544	407	420	471	545
10.0	540	558	626	725	541	559	626	725	541	559	627	725
12.5	675	698	782	906	675	698	782	906	676	698	783	906
15.0	810	837	938	1087	810	837	939	1087	810	838	939	1087

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	47	48	50	53	52	53	54	57	58	59	60	63
1.0	67	68	74	82	70	71	77	85	75	76	81	89
2.5	140	145	161	185	142	146	163	186	144	149	165	188
5.0	273	282	315	364	273	282	316	365	275	284	317	366
7.5	407	420	471	545	407	421	471	545	408	421	472	546
10.0	541	559	627	725	541	560	627	726	542	560	627	726
12.5	676	698	783	906	676	699	783	906	676	699	783	907
15.0	810	838	939	1087	811	838	939	1087	811	838	939	1087

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	61	61	63	65	64	65	66	69	69	70	71	73
1.0	76	78	83	90	80	81	86	93	84	85	89	97
2.5	145	150	165	189	147	151	167	190	149	153	169	192
5.0	275	284	317	366	276	285	318	367	277	286	319	368
7.5	408	422	472	546	409	422	473	546	410	423	473	547
10.0	542	560	628	726	543	561	628	727	543	561	629	727
12.5	677	699	784	907	677	700	784	907	677	700	784	907
15.0	811	838	940	1088	811	839	940	1088	812	839	940	1088

TABLE H-1 (1) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	39	40	42	46	45	45	47	51	52	52	54	57
1.0	70	71	77	85	73	75	80	88	78	79	84	92
2.5	169	173	187	208	170	174	188	209	172	176	190	211
5.0	336	344	372	414	337	344	372	415	338	345	373	416
7.5	504	515	557	621	505	516	558	621	505	516	558	622
10.0	672	687	743	828	672	687	743	828	673	687	743	828
12.5	840	858	928	1034	840	858	928	1035	840	859	929	1035
15.0	1008	1030	1114	1241	1008	1030	1114	1241	1008	1030	1114	1242

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	42	43	45	49	48	48	50	53	54	55	56	59
1.0	72	73	79	87	75	77	82	89	79	81	86	93
2.5	170	174	187	208	171	175	189	210	173	177	190	211
5.0	337	344	372	414	338	345	373	415	339	346	374	416
7.5	504	515	557	621	505	516	558	621	506	517	558	622
10.0	672	687	743	828	672	687	743	828	673	688	744	828
12.5	840	858	928	1034	840	859	929	1035	841	859	929	1035
15.0	1008	1030	1114	1241	1008	1030	1114	1241	1008	1030	1114	1242

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	51	52	54	57	56	56	58	61	61	62	63	66
1.0	78	79	84	91	81	82	87	94	85	86	90	97
2.5	172	176	190	210	174	177	191	212	176	179	193	213
5.0	338	345	373	415	339	346	374	416	340	347	375	417
7.5	505	516	558	622	506	517	559	622	506	517	559	623
10.0	673	687	743	828	673	688	744	828	674	688	744	829
12.5	840	859	929	1035	841	859	929	1035	841	859	929	1035
15.0	1008	1030	1114	1242	1008	1030	1114	1242	1009	1031	1115	1242

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	64	64	66	68	67	68	69	72	72	72	74	76
1.0	86	87	92	99	89	90	94	101	93	94	98	104
2.5	176	180	193	214	178	181	195	215	180	183	196	216
5.0	340	347	375	417	341	348	376	418	342	349	377	419
7.5	507	518	559	623	507	518	560	623	508	519	560	624
10.0	674	688	744	829	674	689	745	829	675	689	745	830
12.5	841	860	930	1036	842	860	930	1036	842	860	930	1036
15.0	1009	1031	1115	1242	1009	1031	1115	1242	1009	1031	1115	1243

TABLE H-1 (1) (continued)

TARGET ERROR = 10 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	70	70	71	74	73	73	75	77	77	78	79	81
1.0	135	136	139	143	137	138	140	145	139	140	143	147
2.5	335	336	344	356	335	337	344	356	336	338	345	357
5.0	668	672	687	711	669	672	687	711	669	673	687	711
7.5	1002	1008	1030	1066	1002	1008	1030	1066	1003	1008	1030	1066
10.0	1336	1343	1373	1421	1336	1344	1373	1421	1336	1344	1373	1421
12.5	1670	1679	1716	1776	1670	1679	1716	1776	1670	1679	1716	1776
15.0	2004	2015	2059	2131	2004	2015	2059	2131	2004	2015	2059	2131

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	72	72	73	76	75	75	77	79	79	79	81	83
1.0	136	137	140	144	138	139	141	146	140	141	144	148
2.5	335	337	344	356	336	338	345	357	337	339	346	358
5.0	668	672	687	711	669	672	687	711	669	673	688	711
7.5	1002	1008	1030	1066	1002	1008	1030	1066	1003	1008	1030	1066
10.0	1336	1343	1373	1421	1336	1344	1373	1421	1336	1344	1373	1421
12.5	1670	1679	1716	1776	1670	1679	1716	1776	1670	1680	1716	1776
15.0	2004	2015	2059	2131	2004	2015	2059	2131	2004	2015	2059	2131

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	77	78	79	81	80	81	82	84	84	85	86	88
1.0	139	140	143	147	141	142	144	149	143	144	147	151
2.5	336	338	345	357	337	339	346	358	338	340	347	359
5.0	669	673	687	711	669	673	688	712	670	674	688	712
7.5	1003	1008	1030	1066	1003	1008	1030	1066	1003	1009	1031	1067
10.0	1336	1344	1373	1421	1337	1344	1373	1421	1337	1344	1374	1421
12.5	1670	1679	1716	1776	1670	1680	1716	1776	1670	1680	1717	1776
15.0	2004	2015	2059	2131	2004	2015	2059	2131	2004	2015	2060	2131

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	86	86	87	89	89	89	90	92	92	93	94	95
1.0	144	145	148	152	146	146	149	154	148	149	151	156
2.5	338	340	347	359	339	341	348	360	340	342	349	361
5.0	670	674	688	712	670	674	689	713	671	675	689	713
7.5	1003	1009	1031	1067	1004	1009	1031	1067	1004	1009	1031	1067
10.0	1337	1344	1374	1421	1337	1344	1374	1422	1337	1345	1374	1422
12.5	1671	1680	1717	1776	1671	1680	1717	1776	1671	1680	1717	1777
15.0	2004	2016	2060	2131	2004	2016	2060	2131	2005	2016	2060	2132

TABLE H-1 (1) (continued)

TARGET ERROR = 15 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	102	102	103	105	104	105	106	107	107	108	109	110
1.0	201	202	204	207	202	203	205	208	204	204	206	210
2.5	501	502	507	515	501	503	507	516	502	503	508	516
5.0	1001	1003	1013	1030	1001	1004	1014	1030	1002	1004	1014	1030
7.5	1501	1505	1520	1544	1501	1505	1520	1545	1502	1505	1520	1545
10.0	2002	2007	2026	2059	2002	2007	2027	2059	2002	2007	2027	2059
12.5	2502	2508	2533	2574	2502	2508	2533	2574	2502	2508	2533	2574
15.0	3002	3010	3040	3089	3002	3010	3040	3089	3003	3010	3040	3089

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	103	104	105	106	106	106	107	108	109	109	110	111
1.0	202	202	204	208	203	204	205	209	205	205	207	210
2.5	501	502	507	515	502	503	508	516	502	503	508	517
5.0	1001	1004	1014	1030	1001	1004	1014	1030	1002	1004	1014	1030
7.5	1501	1505	1520	1544	1502	1505	1520	1545	1502	1506	1520	1545
10.0	2002	2007	2027	2059	2002	2007	2027	2059	2002	2007	2027	2059
12.5	2502	2508	2533	2574	2502	2508	2533	2574	2502	2509	2533	2574
15.0	3002	3010	3040	3089	3002	3010	3040	3089	3003	3010	3040	3089

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	107	108	109	110	110	110	111	112	113	113	114	115
1.0	204	204	206	210	205	206	208	211	207	207	209	212
2.5	502	503	508	516	502	504	509	517	503	504	509	517
5.0	1002	1004	1014	1030	1002	1004	1014	1030	1002	1005	1015	1031
7.5	1502	1505	1520	1545	1502	1506	1520	1545	1502	1506	1521	1545
10.0	2002	2007	2027	2059	2002	2007	2027	2059	2002	2007	2027	2060
12.5	2502	2508	2533	2574	2502	2509	2533	2574	2502	2509	2533	2574
15.0	3003	3010	3040	3089	3003	3010	3040	3089	3003	3010	3040	3089

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	114	114	115	116	116	116	117	118	119	119	120	121
1.0	207	208	210	213	209	209	211	214	210	211	212	216
2.5	503	505	510	518	504	505	510	518	504	506	511	519
5.0	1002	1005	1015	1031	1002	1005	1015	1031	1003	1005	1015	1031
7.5	1502	1506	1521	1545	1502	1506	1521	1545	1503	1506	1521	1546
10.0	2002	2007	2027	2060	2002	2007	2027	2060	2003	2008	2027	2060
12.5	2503	2509	2534	2574	2503	2509	2534	2574	2503	2509	2534	2575
15.0	3003	3010	3040	3089	3003	3010	3040	3089	3003	3010	3040	3089

TABLE H-1 (1) (continued)

TARGET ERROR = 20 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	135	135	136	137	137	137	138	139	139	139	140	141
1.0	268	268	269	272	268	269	270	273	270	270	272	274
2.5	667	668	672	678	668	669	672	678	668	669	673	679
5.0	1334	1336	1343	1356	1334	1336	1344	1356	1334	1336	1344	1356
7.5	2001	2004	2015	2033	2001	2004	2015	2034	2001	2004	2015	2034
10.0	2668	2672	2686	2711	2668	2672	2687	2711	2668	2672	2687	2711
12.5	3335	3339	3358	3389	3335	3339	3358	3389	3335	3340	3358	3389
15.0	4002	4007	4030	4067	4002	4007	4030	4067	4002	4007	4030	4067

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	136	136	137	138	138	138	139	140	140	140	141	142
1.0	268	268	270	272	269	269	271	273	270	271	272	274
2.5	667	668	672	678	668	669	672	679	668	669	673	679
5.0	1334	1336	1343	1356	1334	1336	1344	1356	1335	1336	1344	1356
7.5	2001	2004	2015	2034	2001	2004	2015	2034	2001	2004	2015	2034
10.0	2668	2672	2687	2711	2668	2672	2687	2711	2668	2672	2687	2711
12.5	3335	3339	3358	3389	3335	3340	3358	3389	3335	3340	3358	3389
15.0	4002	4007	4030	4067	4002	4007	4030	4067	4002	4007	4030	4067

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	139	139	140	141	141	141	142	143	143	143	144	145
1.0	270	270	271	274	271	271	272	275	272	272	274	276
2.5	668	669	673	679	668	669	673	679	669	670	674	680
5.0	1334	1336	1344	1356	1335	1337	1344	1356	1335	1337	1344	1357
7.5	2001	2004	2015	2034	2001	2004	2015	2034	2001	2004	2015	2034
10.0	2668	2672	2687	2711	2668	2672	2687	2711	2668	2672	2687	2712
12.5	3335	3340	3358	3389	3335	3340	3358	3389	3335	3340	3358	3389
15.0	4002	4007	4030	4067	4002	4007	4030	4067	4002	4008	4030	4067

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	144	144	145	146	146	146	146	148	148	148	149	150
1.0	272	273	274	277	273	273	275	277	274	275	276	279
2.5	669	670	674	680	670	670	674	680	670	671	675	681
5.0	1335	1337	1344	1357	1335	1337	1344	1357	1335	1337	1345	1357
7.5	2002	2004	2016	2034	2002	2004	2016	2034	2002	2005	2016	2034
10.0	2668	2672	2687	2712	2668	2672	2687	2712	2668	2672	2687	2712
12.5	3335	3340	3358	3389	3335	3340	3359	3389	3335	3340	3359	3389
15.0	4002	4008	4030	4067	4002	4008	4030	4067	4002	4008	4030	4067

TABLE H-1 (1) (continued)

TARGET ERROR = 25 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	168	168	169	170	169	169	170	171	171	171	172	173
1.0	334	334	336	338	335	335	336	338	336	336	337	339
2.5	834	835	838	842	834	835	838	843	834	835	838	843
5.0	1667	1669	1675	1685	1667	1669	1675	1685	1668	1669	1675	1685
7.5	2501	2503	2512	2527	2501	2503	2512	2527	2501	2503	2512	2527
10.0	3334	3337	3349	3369	3334	3337	3349	3369	3334	3337	3349	3369
12.5	4168	4171	4186	4211	4168	4171	4186	4211	4168	4172	4186	4211
15.0	5001	5006	5024	5053	5001	5006	5024	5053	5001	5006	5024	5053

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	169	169	169	170	170	170	171	172	172	172	173	174
1.0	334	335	336	338	335	335	337	339	336	336	338	340
2.5	834	835	838	843	834	835	838	843	835	835	838	843
5.0	1667	1669	1675	1685	1667	1669	1675	1685	1668	1669	1675	1685
7.5	2501	2503	2512	2527	2501	2503	2512	2527	2501	2503	2512	2527
10.0	3334	3337	3349	3369	3334	3337	3349	3369	3334	3337	3349	3369
12.5	4168	4171	4186	4211	4168	4171	4186	4211	4168	4172	4187	4211
15.0	5001	5006	5024	5053	5001	5006	5024	5053	5001	5006	5024	5054

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	171	171	172	173	173	173	173	174	175	175	175	176
1.0	336	336	337	339	336	337	338	340	337	338	339	341
2.5	834	835	838	843	835	835	838	843	835	836	839	844
5.0	1668	1669	1675	1685	1668	1669	1675	1685	1668	1669	1675	1685
7.5	2501	2503	2512	2527	2501	2503	2512	2527	2501	2503	2512	2527
10.0	3334	3337	3349	3369	3334	3337	3349	3369	3334	3337	3349	3369
12.5	4168	4172	4186	4211	4168	4172	4187	4211	4168	4172	4187	4211
15.0	5001	5006	5024	5053	5001	5006	5024	5054	5001	5006	5024	5054

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	175	175	176	177	177	177	177	178	179	179	179	180
1.0	338	338	339	341	339	339	340	342	339	340	341	343
2.5	835	836	839	844	836	836	839	844	836	837	840	845
5.0	1668	1669	1675	1685	1668	1670	1676	1685	1668	1670	1676	1686
7.5	2501	2503	2512	2527	2501	2504	2512	2527	2501	2504	2513	2527
10.0	3335	3338	3349	3369	3335	3338	3350	3369	3335	3338	3350	3370
12.5	4168	4172	4187	4211	4168	4172	4187	4212	4168	4172	4187	4212
15.0	5001	5006	5024	5054	5001	5006	5024	5054	5002	5006	5024	5054

TABLE M-1 (1) (continued)

TARGET ERROR = 30 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	201	201	202	202	202	202	203	204	204	204	204	205
1.0	401	401	402	403	401	401	402	404	402	402	403	405
2.5	1000	1001	1003	1008	1001	1001	1004	1008	1001	1002	1004	1008
5.0	2000	2002	2007	2015	2001	2002	2007	2015	2001	2002	2007	2015
7.5	3000	3002	3010	3022	3001	3002	3010	3022	3001	3003	3010	3022
10.0	4001	4003	4013	4030	4001	4003	4013	4030	4001	4003	4013	4030
12.5	5001	5004	5016	5037	5001	5004	5016	5037	5001	5004	5016	5037
15.0	6001	6005	6020	6044	6001	6005	6020	6044	6001	6005	6020	6044

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	202	202	202	203	203	203	204	204	205	205	205	206
1.0	401	401	402	404	402	402	403	404	402	403	404	405
2.5	1001	1001	1004	1008	1001	1001	1004	1008	1001	1002	1004	1008
5.0	2000	2002	2007	2015	2001	2002	2007	2015	2001	2002	2007	2015
7.5	3001	3002	3010	3022	3001	3002	3010	3022	3001	3003	3010	3023
10.0	4001	4003	4013	4030	4001	4003	4013	4030	4001	4003	4013	4030
12.5	5001	5004	5016	5037	5001	5004	5016	5037	5001	5004	5016	5037
15.0	6001	6005	6020	6044	6001	6005	6020	6044	6001	6005	6020	6045

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	204	204	204	205	205	205	206	206	207	207	207	208
1.0	402	402	403	405	403	403	404	405	403	404	405	406
2.5	1001	1002	1004	1008	1001	1002	1004	1008	1001	1002	1005	1009
5.0	2001	2002	2007	2015	2001	2002	2007	2015	2001	2002	2007	2015
7.5	3001	3003	3010	3022	3001	3003	3010	3023	3001	3003	3010	3023
10.0	4001	4003	4013	4030	4001	4003	4013	4030	4001	4003	4013	4030
12.5	5001	5004	5016	5037	5001	5004	5016	5037	5001	5004	5017	5037
15.0	6001	6005	6020	6044	6001	6005	6020	6045	6001	6005	6020	6045

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	207	207	208	209	208	209	209	210	210	210	211	211
1.0	404	404	405	407	404	405	406	407	405	405	406	408
2.5	1002	1002	1005	1009	1002	1002	1005	1009	1002	1003	1005	1009
5.0	2001	2002	2007	2016	2001	2002	2007	2016	2001	2003	2008	2016
7.5	3001	3003	3010	3023	3001	3003	3010	3023	3001	3003	3010	3023
10.0	4001	4003	4013	4030	4001	4003	4013	4030	4001	4004	4014	4030
12.5	5001	5004	5017	5037	5001	5004	5017	5037	5001	5004	5017	5037
15.0	6001	6005	6020	6045	6001	6005	6020	6045	6001	6005	6020	6045

TABLE H-2 (1,1,15 DEGREES)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	14	15	19	23	19	21	24	27	22	25	29	33
1.0	18	20	29	38	23	25	32	41	28	31	37	45
2.5	31	39	60	81	35	43	64	87	39	46	68	91
5.0	55	71	105	136	58	75	115	152	62	78	121	162
7.5	79	99	142	185	83	106	158	204	86	111	168	221
10.0	100	123	176	233	107	135	195	253	111	142	210	272
12.5	120	146	210	282	129	161	230	301	134	170	248	321
15.0	138	168	245	332	150	185	264	349	157	197	284	369

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	22	26	24	24	27	30	28	29	32	35
1.0	21	24	31	40	26	28	35	43	31	33	39	47
2.5	33	41	62	83	37	44	65	88	41	48	69	92
5.0	57	73	108	141	60	76	116	154	63	79	122	163
7.5	80	101	146	189	84	107	160	207	87	112	170	223
10.0	102	127	181	237	108	136	198	256	111	143	212	275
12.5	122	150	215	286	130	163	233	304	135	171	250	324
15.0	142	173	249	335	151	187	267	352	158	198	286	372

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	28	30	33	32	32	34	36	36	37	38	40
1.0	30	31	37	45	33	35	40	48	38	39	44	51
2.5	39	46	66	88	42	49	69	92	46	52	72	95
5.0	61	77	115	150	63	79	120	159	66	82	124	167
7.5	84	107	156	202	87	111	165	215	90	114	173	228
10.0	107	134	193	250	111	140	205	265	114	145	216	281
12.5	129	159	227	298	133	168	242	313	137	175	256	331
15.0	149	183	261	346	155	193	276	361	161	202	292	379

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	50	50	51	53	52	52	53	55	55	55	56	58
1.0	51	52	56	61	53	54	58	63	56	57	60	66
2.5	57	62	79	100	59	64	81	102	62	67	83	104
5.0	74	88	128	169	76	90	130	173	78	92	133	176
7.5	95	118	175	229	97	120	179	236	99	122	183	242
10.0	118	148	218	282	120	151	224	291	122	153	230	301
12.5	141	177	257	332	143	180	264	342	145	184	272	353
15.0	163	204	293	380	166	209	302	390	169	213	312	403

TABLE H-2 (1,1,15 DEGREES) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	17	18	20	24	22	23	25	29	27	28	31	34
1.0	24	26	33	41	29	30	36	44	34	35	41	48
2.5	50	55	71	88	53	58	75	95	56	62	78	99
5.0	92	100	123	149	97	107	135	165	100	111	142	176
7.5	128	138	168	205	138	150	185	224	143	157	197	241
10.0	162	174	212	260	175	189	230	279	183	200	246	298
12.5	195	209	256	317	210	226	274	335	221	239	292	354
15.0	227	244	300	375	243	261	318	390	257	277	336	409

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	21	21	24	27	25	26	28	31	30	31	33	36
1.0	27	29	35	43	31	33	38	46	36	37	42	50
2.5	52	57	73	91	55	60	76	96	58	63	79	100
5.0	94	102	127	154	98	108	136	168	101	111	143	178
7.5	131	142	173	209	139	151	187	227	144	158	198	243
10.0	166	178	216	265	177	191	233	282	184	201	248	301
12.5	199	213	260	321	212	228	277	338	222	241	294	356
15.0	231	248	304	378	246	264	321	393	258	278	339	411

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	30	31	34	33	33	35	37	37	38	39	41
1.0	34	35	41	48	37	39	43	50	41	42	47	54
2.5	56	61	77	96	58	63	79	99	61	66	82	103
5.0	98	107	134	164	101	111	140	173	103	114	145	181
7.5	137	149	183	221	142	155	193	235	146	161	202	248
10.0	174	187	228	276	181	196	241	291	187	204	253	307
12.5	208	223	271	331	217	235	286	346	226	245	300	363
15.0	241	259	315	387	252	271	329	402	262	283	345	418

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	51	51	52	53	53	53	54	56	56	56	57	58
1.0	53	54	58	63	56	56	60	65	58	59	63	68
2.5	70	74	88	107	72	76	90	109	74	78	92	111
5.0	108	118	148	183	110	120	151	187	112	122	153	191
7.5	150	163	204	249	152	166	209	256	154	169	213	263
10.0	190	206	255	308	193	210	261	317	196	214	268	327
12.5	228	246	301	364	232	252	309	374	236	257	318	386
15.0	264	285	346	419	269	291	355	429	275	298	366	442

TABLE H-2 (1,1,15 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	20	21	23	26	25	26	28	31	30	31	33	35
1.0	32	33	39	46	36	37	42	49	40	41	46	53
2.5	70	74	85	99	74	77	90	106	77	80	93	111
5.0	126	131	147	168	135	141	161	185	140	147	169	197
7.5	176	182	204	234	189	197	221	252	199	207	235	270
10.0	224	232	260	300	240	248	278	318	253	262	294	336
12.5	272	282	317	368	288	298	334	384	303	314	351	402
15.0	321	332	375	436	336	348	390	450	352	364	407	468

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	23	24	26	29	28	28	30	33	33	33	35	37
1.0	34	35	41	47	37	39	44	50	42	43	47	54
2.5	72	75	87	101	75	78	91	107	78	81	94	112
5.0	129	134	151	173	136	142	162	187	141	148	170	198
7.5	180	186	208	238	191	199	223	255	200	208	237	272
10.0	228	236	264	304	242	251	280	321	254	264	296	339
12.5	276	286	321	371	291	301	337	387	305	316	353	404
15.0	324	336	378	439	339	350	393	453	354	366	410	470

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	31	32	33	35	35	35	36	39	39	39	41	43
1.0	40	41	46	52	43	44	48	55	46	48	52	58
2.5	75	79	91	107	78	81	94	111	80	84	97	114
5.0	135	141	159	183	140	146	167	193	143	150	173	202
7.5	188	195	219	250	196	204	230	263	203	212	241	277
10.0	237	246	275	315	248	257	288	329	258	268	302	345
12.5	286	295	331	381	298	308	345	395	310	321	360	411
15.0	333	345	387	448	346	358	401	461	359	372	416	476

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	52	52	53	54	54	54	55	57	57	57	58	59
1.0	57	58	62	67	59	60	64	68	62	63	66	71
2.5	87	90	102	118	88	92	104	120	90	94	106	122
5.0	147	153	176	204	149	156	179	209	151	158	182	213
7.5	205	214	242	278	208	218	248	286	212	221	253	294
10.0	259	270	303	346	264	275	310	355	270	281	319	366
12.5	311	322	361	412	317	329	369	421	324	337	379	433
15.0	360	373	417	477	367	381	426	487	376	390	437	499

TABLE H-2 (1,1,15 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	26	29	28	29	30	33	33	34	35	38
1.0	40	41	46	52	43	45	49	55	47	48	52	58
2.5	90	92	100	111	94	97	107	120	98	100	111	125
5.0	159	162	174	191	171	175	189	208	179	183	200	222
7.5	223	227	244	269	238	243	261	287	251	257	277	304
10.0	287	293	315	349	302	309	331	365	318	324	348	382
12.5	351	359	387	429	366	373	401	443	382	390	418	460
15.0	416	425	459	511	430	439	472	523	445	455	488	538

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	26	27	29	31	30	31	33	35	35	36	37	39
1.0	42	43	47	53	45	46	50	56	49	50	53	59
2.5	91	94	102	114	95	98	108	121	98	101	111	126
5.0	162	166	178	196	173	177	191	211	180	184	201	223
7.5	227	231	248	273	241	246	264	290	252	258	278	306
10.0	290	296	319	352	305	311	334	367	319	326	350	385
12.5	354	362	390	432	369	376	404	446	384	392	420	462
15.0	419	428	462	513	432	441	475	525	447	456	490	540

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	34	34	35	38	37	37	39	41	41	41	42	44
1.0	47	48	52	57	49	50	54	60	53	54	57	63
2.5	95	98	107	120	98	101	111	124	101	103	114	128
5.0	170	174	187	206	177	181	196	217	182	187	204	227
7.5	236	241	259	284	247	252	271	298	256	262	283	312
10.0	300	306	328	362	312	318	342	375	324	331	356	391
12.5	363	371	399	441	376	383	412	453	389	397	426	469
15.0	427	436	470	521	439	448	482	532	453	462	496	546

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	53	53	54	56	55	56	56	58	58	58	59	61
1.0	63	63	66	71	64	65	68	73	67	68	71	75
2.5	106	108	118	132	107	110	120	134	109	112	122	136
5.0	185	190	206	229	188	193	210	234	191	196	214	239
7.5	258	264	285	313	263	269	291	321	268	275	298	330
10.0	325	332	357	392	332	339	365	401	340	347	374	412
12.5	390	398	427	469	398	406	436	479	407	416	447	490
15.0	454	463	497	547	462	472	506	556	472	482	517	568

TABLE H-2 (1,1,15 DEGREES) (continued)

TARGET ERROR = 5 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	28	30	32	32	32	34	36	36	37	38	40
1.0	49	50	53	58	52	53	56	61	55	56	59	64
2.5	108	109	116	124	114	116	124	134	118	121	129	141
5.0	191	193	203	217	205	208	218	234	215	219	231	249
7.5	270	274	287	309	286	290	304	325	301	305	320	343
10.0	350	355	373	402	365	370	388	417	381	386	405	434
12.5	431	437	461	497	445	451	474	509	460	466	489	525
15.0	513	521	549	592	525	532	560	603	540	547	574	617

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	30	32	34	34	34	35	38	38	38	40	42
1.0	50	51	54	60	53	54	57	62	56	57	60	66
2.5	110	112	118	127	115	117	125	136	119	121	129	142
5.0	194	197	206	221	207	210	221	237	216	220	232	250
7.5	274	277	291	312	288	292	306	328	302	306	322	345
10.0	353	358	377	405	368	372	391	419	383	388	407	436
12.5	434	440	463	499	447	453	476	512	462	468	491	527
15.0	516	523	551	594	527	535	562	605	542	549	576	619

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	36	37	38	40	39	40	41	43	43	44	45	47
1.0	54	55	59	64	57	58	61	66	60	61	64	69
2.5	115	117	124	134	118	120	128	140	121	123	132	144
5.0	203	206	216	232	212	215	227	244	220	223	236	255
7.5	283	287	301	322	295	299	314	336	307	311	327	351
10.0	363	367	386	414	375	380	398	427	388	394	413	442
12.5	442	448	471	507	454	460	483	519	468	474	497	533
15.0	523	530	558	601	534	541	569	611	547	554	582	625

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	55	55	56	58	57	57	58	60	60	60	61	62
1.0	69	69	72	76	70	71	74	78	73	73	76	80
2.5	125	127	135	147	127	129	137	149	129	131	139	152
5.0	222	225	238	256	225	229	242	262	229	233	247	268
7.5	308	312	328	352	314	319	336	360	321	326	344	369
10.0	389	394	414	443	397	402	422	452	406	412	432	463
12.5	469	475	498	533	477	483	507	543	487	493	518	554
15.0	548	555	582	625	556	563	591	634	567	574	602	645

TABLE H-3 (1,1,30 DEGREES)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	12	15	19	23	15	18	23	27	16	20	27	31
1.0	17	20	28	36	21	25	32	41	24	29	37	45
2.5	31	38	54	69	35	42	61	79	39	46	66	85
5.0	52	63	89	116	57	70	99	127	61	76	108	138
7.5	71	85	122	165	78	95	133	174	83	102	144	185
10.0	88	107	157	215	97	117	166	223	104	126	177	232
12.5	106	128	192	265	115	138	200	272	123	149	211	281
15.0	123	150	227	316	132	160	235	322	141	170	244	330

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	18	19	22	26	22	23	26	30	24	26	30	34
1.0	21	24	31	39	25	28	35	43	28	31	39	47
2.5	33	40	57	72	37	44	62	80	41	48	67	86
5.0	54	66	92	119	58	72	101	129	62	77	110	140
7.5	73	88	125	167	79	96	135	176	84	104	145	187
10.0	91	109	159	216	98	119	168	224	105	128	179	234
12.5	108	131	194	267	116	140	202	273	124	150	212	282
15.0	125	153	229	318	134	162	236	323	142	172	246	331

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	28	30	33	31	32	33	36	34	35	37	40
1.0	30	31	37	44	33	35	40	48	36	38	44	51
2.5	39	45	62	79	42	49	66	84	46	52	70	90
5.0	59	71	99	126	62	76	106	135	66	80	113	144
7.5	78	94	132	173	83	101	140	181	87	107	150	191
10.0	97	116	165	221	102	124	174	229	108	131	183	238
12.5	114	137	199	271	121	145	207	277	127	154	216	285
15.0	131	159	234	321	139	167	241	327	146	176	250	334

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	39	39	40	42	41	42	43	45	44	45	46	48
1.0	40	41	46	52	42	44	48	55	46	47	51	58
2.5	47	53	69	86	50	56	72	90	53	59	76	95
5.0	65	78	108	136	68	81	113	143	71	85	118	150
7.5	85	102	141	182	88	107	148	189	92	111	156	198
10.0	104	125	174	229	108	130	181	236	112	136	190	244
12.5	122	146	207	278	127	153	214	284	132	159	223	291
15.0	140	167	241	327	145	174	248	332	151	182	256	339

TABLE H-3 (1,1,30 DEGREES) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	20	24	20	21	25	28	22	24	29	33
1.0	24	26	32	39	28	30	36	44	32	34	41	48
2.5	48	52	63	76	52	57	70	85	56	61	76	92
5.0	82	88	107	130	90	97	117	141	96	104	126	151
7.5	115	123	150	187	124	132	160	195	132	141	170	205
10.0	147	158	195	244	156	167	203	251	165	176	213	260
12.5	180	194	241	303	188	202	248	308	197	211	257	316
15.0	213	230	286	361	220	237	293	366	229	246	301	373

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	20	21	24	27	24	25	28	31	27	28	31	35
1.0	27	29	34	41	31	32	38	45	35	36	42	50
2.5	50	54	66	78	54	58	72	87	58	62	77	93
5.0	85	91	109	133	91	98	119	142	97	105	128	153
7.5	117	125	153	188	125	134	162	197	133	142	172	207
10.0	149	160	197	246	157	169	205	253	166	178	214	261
12.5	182	196	242	304	189	203	249	310	198	212	258	317
15.0	215	231	288	362	222	238	294	367	230	247	302	374

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	30	31	34	32	33	35	37	36	36	38	41
1.0	34	35	40	47	37	38	43	50	41	42	47	54
2.5	55	59	71	85	58	62	76	91	61	66	80	97
5.0	90	97	116	139	95	102	124	148	100	108	131	157
7.5	123	131	159	194	129	139	167	202	136	146	176	211
10.0	155	166	202	250	162	173	210	257	169	181	218	265
12.5	187	201	247	308	194	208	253	313	202	216	261	320
15.0	219	236	292	365	226	242	297	370	234	250	305	377

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	40	40	41	43	42	42	44	46	45	46	47	49
1.0	43	44	48	54	46	47	51	57	49	50	54	60
2.5	61	65	78	93	64	68	81	97	67	71	85	101
5.0	97	104	125	149	100	108	130	155	104	112	136	163
7.5	130	140	167	202	135	145	174	209	140	151	182	217
10.0	163	174	210	257	168	180	217	263	174	187	224	271
12.5	195	208	254	314	200	214	260	319	207	221	267	326
15.0	227	243	298	371	232	249	303	375	239	256	310	382

TABLE H-3 (1,1,30 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	20	21	23	26	24	25	27	31	28	29	31	35
1.0	32	33	38	44	36	37	42	48	40	41	46	52
2.5	65	67	75	85	71	74	83	95	75	78	89	102
5.0	113	117	131	150	122	126	140	160	129	134	150	170
7.5	161	167	188	218	169	175	196	225	178	184	206	235
10.0	210	218	246	286	217	225	253	293	226	234	261	301
12.5	259	269	305	356	266	275	310	361	274	283	318	368
15.0	309	321	364	425	315	326	369	430	322	333	375	435

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	23	24	26	29	27	28	30	33	31	31	34	37
1.0	34	35	40	46	37	39	43	50	41	43	47	54
2.5	67	69	77	88	72	75	84	96	76	79	90	104
5.0	115	119	133	153	123	128	142	162	131	135	151	172
7.5	163	169	190	219	171	177	198	227	179	186	207	236
10.0	211	219	247	288	219	226	254	294	227	235	262	302
12.5	261	270	306	357	267	277	312	362	275	284	319	368
15.0	310	322	365	426	316	327	370	431	323	334	376	436

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	31	31	33	35	34	35	36	39	38	38	40	42
1.0	40	41	45	51	43	44	48	54	46	47	52	58
2.5	72	74	83	94	75	78	88	101	79	82	93	107
5.0	121	125	139	159	127	132	147	167	134	138	155	176
7.5	168	174	195	224	175	181	202	231	183	189	211	240
10.0	216	224	252	292	223	230	258	297	230	238	266	305
12.5	265	274	310	360	271	280	315	365	278	288	322	371
15.0	314	325	368	429	319	331	373	433	326	337	379	439

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	41	41	42	44	44	44	45	47	47	47	48	50
1.0	48	49	53	58	50	51	55	60	53	54	58	63
2.5	78	81	90	102	81	84	94	107	84	87	98	111
5.0	129	133	148	167	133	138	154	174	138	143	160	182
7.5	176	182	203	232	182	188	209	238	188	194	216	246
10.0	223	231	259	298	229	237	264	303	236	244	272	310
12.5	271	281	315	365	276	286	321	370	283	293	327	376
15.0	319	331	373	433	324	336	378	438	331	342	384	443

TABLE H-3 (1,1,30 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	26	29	28	28	30	33	32	32	34	37
1.0	39	40	44	49	43	44	48	54	47	48	52	58
2.5	81	82	88	97	88	90	97	106	94	96	104	114
5.0	144	147	158	175	153	156	167	183	161	165	176	193
7.5	209	213	230	255	216	220	237	262	225	229	246	270
10.0	274	280	303	337	280	286	309	342	288	294	316	349
12.5	340	348	376	419	346	353	381	423	352	360	387	429
15.0	407	416	450	501	411	420	454	505	417	426	460	510

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	26	27	29	31	30	31	32	35	34	35	36	39
1.0	41	42	46	50	45	46	50	55	49	50	53	59
2.5	83	85	91	99	89	91	98	108	95	97	105	116
5.0	146	149	160	177	154	157	169	185	163	166	178	194
7.5	210	215	231	257	217	222	238	263	226	230	247	271
10.0	276	282	304	338	282	287	310	343	289	295	317	350
12.5	341	349	377	420	347	354	382	424	353	361	388	430
15.0	408	417	451	502	412	421	455	506	418	427	460	511

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	34	34	35	38	37	37	38	41	40	41	42	44
1.0	46	47	51	56	49	50	54	59	53	54	57	62
2.5	88	90	97	106	93	95	102	112	97	100	108	119
5.0	152	155	166	182	159	162	173	190	166	169	181	198
7.5	215	219	236	261	222	226	242	267	229	234	250	275
10.0	279	285	308	341	285	291	313	346	292	298	320	353
12.5	345	352	380	423	350	357	385	427	356	363	391	432
15.0	411	420	453	504	415	424	457	508	420	429	463	513

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	43	43	44	46	45	46	47	49	48	49	50	52
1.0	54	55	58	62	56	57	60	65	59	60	63	68
2.5	95	97	104	114	98	100	108	119	102	104	112	124
5.0	160	163	174	190	165	168	180	197	171	174	187	204
7.5	222	227	243	267	228	232	249	273	234	239	256	280
10.0	286	291	313	347	291	297	319	351	297	303	325	358
12.5	350	357	385	427	355	362	390	431	361	368	395	437
15.0	415	424	458	508	419	428	462	512	425	433	467	517

TABLE H-3 (1,1,30 DEGREES) (continued)

TARGET ERROR = 5 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	28	30	32	31	32	34	36	36	36	38	40
1.0	47	47	50	54	51	52	55	59	55	56	59	64
2.5	96	98	102	109	105	106	111	119	111	113	119	128
5.0	176	178	187	201	184	186	195	209	193	195	204	219
7.5	257	261	275	296	264	267	281	302	271	275	289	310
10.0	339	344	363	392	345	349	368	396	351	356	374	403
12.5	422	428	452	488	427	433	456	492	432	438	461	497
15.0	506	513	541	585	509	516	544	588	514	521	549	592

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	30	32	34	34	34	36	38	38	38	39	42
1.0	49	49	52	56	52	53	56	61	56	57	60	65
2.5	99	100	105	112	106	107	113	121	112	114	120	129
5.0	178	180	189	203	185	188	197	211	194	196	206	220
7.5	258	262	276	297	265	268	282	303	272	276	290	311
10.0	341	345	364	393	346	350	369	397	352	357	375	403
12.5	423	429	453	489	427	433	457	493	433	439	462	498
15.0	506	514	542	585	510	517	545	588	515	522	550	593

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	36	37	38	40	39	40	41	43	43	43	45	47
1.0	53	54	57	61	56	57	60	65	60	61	64	68
2.5	104	106	111	118	110	111	117	125	115	117	123	132
5.0	183	185	194	208	190	192	201	215	197	200	209	223
7.5	263	266	280	301	268	272	286	307	276	279	293	314
10.0	344	349	367	396	349	354	372	400	355	360	378	406
12.5	426	432	455	491	430	436	459	495	436	442	464	500
15.0	509	516	544	587	512	519	547	590	517	524	552	595

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	45	45	46	48	48	48	49	51	51	51	52	54
1.0	60	61	63	68	63	63	66	70	65	66	69	73
2.5	111	113	118	126	115	117	123	131	119	121	128	137
5.0	190	193	202	216	196	198	208	222	202	205	215	229
7.5	269	272	286	307	274	278	291	312	281	284	298	319
10.0	349	354	372	401	354	358	377	405	360	364	383	410
12.5	430	436	459	495	434	440	463	499	440	445	468	504
15.0	512	520	547	591	516	523	551	594	520	528	555	598

TABLE H-4 (1,1,45 DEGREES)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	11	14	18	23	12	15	22	27	12	16	24	30
1.0	17	20	28	35	20	24	32	40	21	27	37	45
2.5	30	36	49	62	35	42	57	71	39	47	64	79
5.0	49	58	82	109	55	66	90	116	60	73	99	125
7.5	66	79	115	158	73	87	122	163	80	95	130	170
10.0	83	100	150	207	90	108	156	212	98	116	163	217
12.5	100	122	185	257	107	129	190	261	115	137	196	266
15.0	118	145	221	308	124	151	225	311	132	158	230	315

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	17	19	22	26	20	21	25	29	21	23	28	33
1.0	21	24	30	37	24	27	35	42	26	30	39	47
2.5	33	39	52	65	37	44	59	73	40	48	65	81
5.0	51	60	84	111	57	68	92	118	62	74	100	126
7.5	68	81	117	159	75	89	124	164	81	96	132	171
10.0	85	102	151	208	92	109	157	213	99	117	164	218
12.5	102	124	186	258	109	130	191	262	116	138	197	267
15.0	119	146	222	309	126	152	226	312	133	159	231	316

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	28	30	33	30	31	33	36	33	33	36	39
1.0	30	31	37	43	32	34	40	47	35	37	44	51
2.5	39	45	58	71	42	48	63	78	45	52	69	84
5.0	57	66	90	116	61	72	96	122	65	77	104	130
7.5	74	87	122	163	79	93	128	168	84	100	135	174
10.0	90	107	155	211	96	114	160	215	102	121	167	221
12.5	107	128	189	261	113	134	194	264	119	141	200	269
15.0	124	150	224	311	129	155	228	314	136	162	234	318

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	39	39	40	42	41	41	43	45	43	44	45	48
1.0	40	41	46	51	42	44	48	54	45	46	51	58
2.5	47	52	66	80	50	55	70	85	53	59	74	90
5.0	64	74	98	123	67	78	103	129	71	83	109	135
7.5	81	95	129	168	85	100	134	173	89	105	141	179
10.0	97	115	161	216	102	120	166	220	107	126	172	225
12.5	114	135	195	265	119	140	199	268	124	147	205	273
15.0	130	156	229	314	135	161	233	317	141	167	238	321

TABLE H-4 (1,1,45 DEGREES) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	20	24	18	20	24	28	19	21	27	32
1.0	24	26	32	37	28	30	36	43	31	34	41	48
2.5	46	49	58	69	51	55	66	78	56	60	73	86
5.0	78	83	100	124	85	90	108	130	91	98	116	138
7.5	110	118	145	180	116	124	151	185	123	132	158	192
10.0	143	154	190	238	148	159	195	242	155	166	201	247
12.5	176	190	236	296	181	194	240	299	187	200	245	304
15.0	210	226	282	354	214	230	285	357	219	235	289	361

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	20	21	24	27	23	24	27	31	24	26	30	34
1.0	27	29	34	40	30	32	38	45	34	36	42	49
2.5	48	51	60	71	53	57	68	79	57	62	74	87
5.0	79	85	102	125	86	92	109	132	92	99	117	139
7.5	111	119	146	181	118	126	152	186	124	133	159	193
10.0	144	155	191	239	149	160	196	243	156	167	202	248
12.5	177	191	237	297	182	195	240	300	188	201	245	304
15.0	211	227	282	355	215	231	286	358	220	236	290	361

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	30	31	34	32	32	34	37	34	35	37	40
1.0	34	35	40	46	37	38	44	50	40	42	47	54
2.5	53	57	66	78	57	61	72	84	61	65	77	91
5.0	85	90	107	130	90	96	114	136	96	102	121	143
7.5	116	124	150	185	121	129	155	189	128	136	162	196
10.0	148	159	194	242	153	163	199	245	159	170	204	250
12.5	180	194	239	299	185	198	243	302	191	204	248	306
15.0	214	230	285	357	217	234	288	359	223	239	292	363

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	39	40	41	43	42	42	44	46	44	45	46	49
1.0	43	44	48	54	46	47	51	57	48	50	54	60
2.5	60	64	74	86	63	67	78	91	67	71	83	96
5.0	92	97	115	137	96	102	120	142	100	107	126	148
7.5	122	130	156	190	127	135	161	194	132	141	167	200
10.0	154	164	199	246	158	169	203	249	164	174	209	254
12.5	186	199	243	302	190	203	247	305	195	208	252	309
15.0	218	234	288	360	222	238	291	362	227	242	295	366

TABLE H-4 (1,1,45 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	20	21	23	26	23	24	27	31	25	26	30	34
1.0	31	33	36	41	36	37	42	47	39	41	46	52
2.5	61	63	70	79	68	70	77	87	73	76	85	95
5.0	108	112	125	145	115	118	132	151	122	126	139	158
7.5	157	163	183	213	162	168	188	217	168	174	194	223
10.0	206	214	242	282	211	218	246	285	216	224	251	289
12.5	256	266	301	351	260	270	304	354	265	274	308	357
15.0	307	318	361	420	310	321	363	423	314	325	367	426

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	23	24	26	29	26	27	29	33	29	30	33	36
1.0	34	35	39	43	37	39	43	49	41	43	47	54
2.5	63	65	72	81	69	71	79	89	74	77	86	96
5.0	110	113	127	146	116	120	133	152	123	127	140	159
7.5	158	164	184	214	163	169	189	218	169	175	195	223
10.0	207	215	243	282	212	219	247	286	217	224	252	290
12.5	257	267	302	352	261	270	305	354	265	275	309	358
15.0	307	319	361	421	310	322	364	423	314	326	367	426

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	31	31	33	36	34	34	36	39	37	37	39	42
1.0	40	41	44	49	43	44	48	53	46	47	52	57
2.5	68	70	77	87	73	75	83	93	78	80	89	100
5.0	114	118	131	150	120	124	137	155	126	130	144	162
7.5	162	167	188	217	166	172	192	221	172	178	198	226
10.0	210	218	245	285	214	222	249	288	219	227	254	292
12.5	260	269	304	353	263	273	307	356	267	277	311	359
15.0	309	321	363	422	312	324	365	424	316	328	369	428

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	41	41	43	44	43	44	45	47	46	46	48	50
1.0	48	49	52	57	50	51	55	60	53	54	58	63
2.5	75	77	85	95	79	81	87	100	82	85	94	105
5.0	121	125	138	156	125	129	143	161	131	135	149	167
7.5	167	173	193	221	171	177	197	225	177	182	202	230
10.0	215	222	250	288	219	226	253	291	223	231	258	295
12.5	263	273	307	356	267	276	310	359	271	280	314	362
15.0	313	324	366	425	315	327	368	427	319	331	372	430

TABLE H-4 (1,1,45 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	26	29	27	28	30	33	30	31	34	37
1.0	38	39	42	46	43	44	47	52	47	48	52	57
2.5	76	78	83	91	83	85	90	98	90	91	98	106
5.0	140	143	154	170	145	148	159	175	152	155	166	181
7.5	205	210	226	251	210	214	230	255	215	219	235	260
10.0	272	278	300	333	275	281	303	336	279	285	307	340
12.5	338	346	374	415	341	348	376	417	345	352	380	421
15.0	405	414	448	498	407	416	450	499	410	419	453	502

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	26	27	29	31	30	30	32	35	33	34	36	39
1.0	40	41	44	48	45	46	49	53	49	50	53	58
2.5	78	79	85	93	84	86	92	100	91	92	99	107
5.0	141	144	155	171	147	149	160	176	153	156	167	182
7.5	206	211	227	252	210	215	231	255	216	220	236	260
10.0	272	278	301	334	276	282	304	336	280	286	308	340
12.5	339	346	374	416	341	349	377	418	345	353	380	421
15.0	406	415	448	498	408	417	450	500	411	420	453	502

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	34	34	35	37	36	37	38	41	39	40	42	44
1.0	46	47	49	53	49	50	53	58	53	54	57	62
2.5	83	85	90	98	88	90	96	104	94	96	102	111
5.0	145	148	159	174	150	153	163	179	156	159	170	185
7.5	209	214	230	254	213	217	234	258	218	223	239	263
10.0	275	280	303	336	278	284	306	338	282	288	310	342
12.5	341	348	376	417	343	351	378	419	347	354	382	423
15.0	407	416	450	499	409	418	452	501	412	421	454	504

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	43	43	44	46	45	46	47	49	48	48	50	52
1.0	53	54	57	61	56	57	60	64	59	60	63	68
2.5	90	92	97	105	94	96	102	110	98	100	107	116
5.0	151	154	164	180	155	158	169	184	161	164	174	190
7.5	214	218	234	258	217	222	238	262	222	227	242	266
10.0	278	284	306	339	281	287	309	341	285	291	313	345
12.5	344	351	379	420	346	354	381	422	350	357	384	425
15.0	410	419	452	501	412	421	454	503	415	424	457	506

TABLE H-4 (1,1,45 DEGREES) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	29	31	31	32	34	36	35	35	37	40
1.0	45	45	48	51	50	51	54	57	55	55	58	63
2.5	92	93	97	104	98	100	104	111	105	107	112	119
5.0	172	174	183	197	177	179	188	202	183	185	194	208
7.5	254	258	272	293	258	261	275	296	262	266	279	300
10.0	337	342	361	389	340	345	363	391	344	348	367	395
12.5	421	427	450	485	423	429	452	487	426	432	455	490
15.0	504	511	539	582	506	513	541	583	508	516	543	586

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	30	32	34	33	34	36	38	37	37	39	42
1.0	47	47	50	53	52	52	55	59	56	57	60	64
2.5	93	94	99	106	100	101	106	112	106	108	113	120
5.0	173	175	184	198	178	180	189	203	184	186	195	208
7.5	255	259	272	294	259	262	276	297	263	267	280	301
10.0	338	343	361	389	341	345	364	392	344	349	367	395
12.5	421	427	450	486	423	429	452	488	426	432	455	490
15.0	504	512	540	582	506	514	541	584	509	516	544	586

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	36	37	38	40	39	40	41	43	43	43	44	47
1.0	52	53	55	58	56	57	59	63	60	60	63	67
2.5	98	99	104	110	104	105	110	116	109	111	116	123
5.0	176	179	188	201	181	183	192	206	186	189	198	211
7.5	257	261	275	296	261	264	278	299	265	269	282	303
10.0	340	345	363	391	342	347	365	393	346	351	369	397
12.5	423	429	452	487	425	431	454	489	428	434	457	492
15.0	506	513	541	583	507	515	542	585	510	517	545	587

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	45	45	46	48	48	48	49	51	50	51	52	54
1.0	59	60	62	66	62	63	65	69	65	66	69	73
2.5	105	106	111	117	109	111	115	122	114	115	121	128
5.0	182	184	193	206	186	188	197	210	191	193	202	215
7.5	261	265	278	299	264	268	281	302	269	272	286	306
10.0	343	348	366	394	345	350	368	396	349	354	372	399
12.5	425	431	454	489	427	433	456	491	430	436	459	494
15.0	508	515	543	585	510	517	544	587	512	519	547	589

TABLE H-5 (1,1,75 DEGREES)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	10	13	19	23	10	13	21	27	10	14	22	29
1.0	17	21	27	32	18	23	33	39	19	25	37	45
2.5	30	34	44	55	35	41	52	63	39	47	60	71
5.0	46	53	74	99	53	60	80	104	59	68	88	110
7.5	62	73	106	145	69	80	111	148	76	87	117	153
10.0	79	95	139	191	85	100	143	194	91	106	148	197
12.5	97	117	173	238	101	121	176	240	107	126	179	243
15.0	114	139	206	285	119	142	209	287	124	147	212	289

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	17	18	22	26	17	19	25	30	18	20	26	32
1.0	21	24	30	35	22	27	35	41	23	28	39	47
2.5	32	37	46	57	37	43	54	64	40	49	62	72
5.0	48	55	75	100	54	62	81	105	61	70	89	111
7.5	64	75	107	146	70	81	112	149	77	88	118	154
10.0	81	96	140	192	86	101	144	194	92	107	148	198
12.5	98	118	173	239	103	122	176	241	108	127	180	244
15.0	115	139	207	285	120	143	209	287	125	148	213	290

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	30	33	29	30	33	37	30	31	35	39
1.0	29	32	37	42	31	34	41	47	33	36	44	52
2.5	39	43	53	63	42	48	59	69	46	53	66	77
5.0	54	61	80	104	59	67	86	108	64	73	92	114
7.5	69	80	111	148	74	85	115	151	80	92	121	156
10.0	85	100	143	194	90	104	146	196	96	110	151	200
12.5	101	121	176	240	106	125	178	242	111	130	182	245
15.0	119	142	209	287	122	145	211	289	128	150	214	291

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	38	39	41	43	40	41	43	45	42	42	45	48
1.0	40	41	46	51	42	44	49	55	44	46	52	59
2.5	47	52	61	71	50	56	66	76	53	59	72	83
5.0	61	69	87	109	66	74	92	114	70	79	98	119
7.5	76	86	116	152	80	91	120	155	86	97	125	160
10.0	91	106	147	197	95	110	150	200	101	115	155	203
12.5	107	126	179	243	111	129	182	245	116	134	186	248
15.0	123	146	212	289	127	150	214	291	132	154	217	293

TABLE H-5 (1,1,75 DEGREES) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	15	17	21	24	16	18	23	29	16	19	25	31
1.0	24	26	30	34	28	30	37	42	29	33	41	48
2.5	43	46	53	63	50	53	60	70	56	59	68	78
5.0	74	79	95	115	80	85	100	120	86	91	106	125
7.5	107	114	139	170	111	119	142	173	117	124	147	177
10.0	140	151	183	226	144	154	186	228	148	158	189	231
12.5	174	187	228	281	177	190	230	283	181	193	233	285
15.0	208	223	273	337	210	226	274	338	214	229	277	340

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	21	24	27	21	22	27	31	22	23	28	34
1.0	27	29	33	37	30	33	39	44	32	35	43	50
2.5	45	48	55	65	51	54	62	71	57	61	70	79
5.0	76	81	96	117	81	86	101	121	88	92	107	126
7.5	108	115	139	171	112	120	143	174	118	125	148	178
10.0	141	151	184	226	145	155	186	228	149	159	190	231
12.5	175	188	228	281	178	190	230	283	181	194	233	286
15.0	209	224	273	337	211	226	275	339	214	229	277	341

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	29	32	34	31	31	34	38	32	33	36	40
1.0	34	35	40	44	37	39	44	49	39	41	48	54
2.5	51	54	61	70	56	59	67	76	61	64	73	83
5.0	80	85	100	120	85	90	104	124	91	96	110	129
7.5	111	119	142	173	115	122	145	176	120	128	150	180
10.0	144	154	186	228	147	157	188	230	151	161	192	233
12.5	177	190	230	283	180	192	232	285	183	196	235	287
15.0	210	226	274	338	213	228	276	340	216	231	279	342

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	39	40	41	44	41	42	44	46	43	44	46	49
1.0	43	44	48	52	46	47	52	56	48	49	55	61
2.5	59	61	69	77	62	66	74	82	66	70	79	89
5.0	86	91	106	125	91	95	110	128	96	101	115	133
7.5	116	123	146	177	120	127	150	179	125	132	154	183
10.0	148	158	189	230	151	161	192	233	155	165	195	236
12.5	180	193	233	285	183	195	235	287	186	199	238	289
15.0	213	228	277	340	215	231	278	342	219	233	281	344

TABLE H-5 (1,1,75 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	20	21	23	26	22	23	27	31	22	24	29	34
1.0	31	32	35	38	36	37	41	46	39	41	47	52
2.5	58	59	65	73	64	66	72	80	71	73	79	87
5.0	105	109	121	139	110	113	125	142	115	119	131	147
7.5	155	160	179	205	158	163	182	208	162	167	186	211
10.0	205	212	238	273	207	215	240	274	210	218	243	277
12.5	255	264	296	340	257	266	298	341	260	269	300	344
15.0	305	317	355	408	307	318	356	409	309	321	358	410

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	23	24	26	29	25	26	29	33	26	27	31	36
1.0	33	34	37	40	38	39	43	47	41	43	48	53
2.5	59	61	67	75	65	67	73	81	72	74	80	88
5.0	106	110	122	139	111	114	126	143	116	120	131	148
7.5	155	161	180	206	159	164	183	208	163	168	186	212
10.0	205	213	238	273	208	215	240	275	211	218	243	277
12.5	255	265	297	340	257	267	298	342	260	269	301	344
15.0	306	317	355	408	307	319	357	409	310	321	359	411

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	31	32	33	36	33	34	36	39	35	36	38	42
1.0	39	40	43	47	43	44	48	52	46	47	52	58
2.5	64	66	72	80	70	71	77	85	75	77	84	92
5.0	110	113	125	142	114	117	129	145	119	122	134	150
7.5	158	163	182	208	161	166	185	210	165	170	188	213
10.0	207	215	240	274	209	217	242	276	213	220	245	279
12.5	257	266	298	341	259	268	300	343	262	271	302	345
15.0	307	318	356	409	309	320	358	410	311	322	360	412

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	41	41	43	45	43	43	45	47	45	45	47	50
1.0	48	49	52	55	50	52	55	59	53	54	59	64
2.5	72	73	79	86	76	78	84	91	80	83	89	97
5.0	115	118	130	146	118	122	134	150	123	127	138	154
7.5	162	167	185	211	164	170	188	213	168	174	191	216
10.0	210	217	242	277	212	220	244	278	215	223	247	281
12.5	259	269	300	343	261	270	302	345	264	273	304	347
15.0	309	320	358	410	311	322	359	412	313	324	361	413

TABLE H-5 (1,1,75 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	26	28	27	28	30	34	28	29	33	37
1.0	37	37	39	42	43	44	46	50	47	48	52	56
2.5	73	74	79	86	79	80	85	91	85	86	91	98
5.0	137	140	151	165	141	144	154	168	145	148	158	172
7.5	204	208	223	246	206	210	226	248	209	214	229	250
10.0	270	276	297	326	272	278	299	328	275	280	301	330
12.5	337	344	370	407	339	346	372	409	341	348	374	410
15.0	404	413	444	489	405	414	445	490	407	416	447	491

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	26	27	29	31	29	30	33	36	31	32	35	39
1.0	39	40	42	44	44	45	48	51	49	50	54	58
2.5	74	76	81	87	80	81	86	93	86	88	92	99
5.0	138	141	151	166	142	145	155	169	146	149	159	173
7.5	204	209	224	246	207	211	226	248	210	214	229	251
10.0	271	277	297	327	273	278	299	328	275	281	301	330
12.5	337	345	371	408	339	346	372	409	341	348	374	411
15.0	404	413	444	489	406	414	446	490	407	416	447	491

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	34	34	35	37	36	37	39	41	38	39	41	44
1.0	45	45	48	51	49	50	53	56	53	54	57	62
2.5	79	80	85	91	84	85	90	96	89	91	96	102
5.0	141	144	154	168	144	147	157	171	149	151	161	175
7.5	206	210	226	248	208	213	228	250	212	216	231	252
10.0	272	278	299	328	274	280	300	329	276	282	303	332
12.5	339	346	372	409	340	347	373	410	342	349	375	412
15.0	405	414	445	490	407	415	446	491	408	417	448	492

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	43	43	44	46	45	46	47	49	47	48	49	52
1.0	53	53	56	59	56	57	59	63	59	60	63	68
2.5	85	86	91	98	89	91	95	102	94	96	101	107
5.0	145	148	158	172	148	151	161	175	152	155	165	178
7.5	209	213	228	250	211	215	231	252	214	219	233	255
10.0	274	280	301	330	276	282	302	331	279	284	305	333
12.5	340	348	373	410	342	349	375	411	344	351	377	413
15.0	407	416	447	491	408	417	448	492	410	419	449	493

TABLE H-5 (1,1,75 DEGREES) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	29	31	31	32	34	36	34	34	37	40
1.0	42	43	45	47	49	49	52	54	54	55	58	61
2.5	88	90	94	100	93	95	99	105	99	101	105	111
5.0	170	172	181	194	173	175	184	196	177	179	187	200
7.5	253	256	270	289	255	258	271	290	258	261	274	293
10.0	336	341	359	384	338	342	360	385	340	345	362	387
12.5	420	426	448	480	421	427	449	481	423	429	450	482
15.0	503	511	537	575	504	511	538	576	506	513	539	577

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	30	31	33	33	34	36	38	36	36	39	42
1.0	45	45	47	49	50	51	53	56	56	56	59	62
2.5	90	91	95	101	95	96	100	106	100	102	106	112
5.0	171	173	182	194	173	176	184	197	177	180	188	200
7.5	253	257	270	289	255	259	272	291	258	262	274	293
10.0	337	341	359	384	338	343	360	386	340	345	362	388
12.5	420	426	448	480	421	427	449	481	423	429	451	482
15.0	504	511	537	575	505	512	538	576	506	513	539	578

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	36	37	38	40	39	40	41	43	42	42	44	47
1.0	50	51	52	55	55	56	58	60	59	60	63	66
2.5	93	95	99	105	98	99	103	109	103	105	109	114
5.0	173	175	184	196	176	178	186	199	179	182	190	202
7.5	255	258	271	290	257	260	273	292	259	263	276	295
10.0	338	342	360	385	339	344	361	387	341	346	363	389
12.5	421	427	449	481	422	428	450	482	424	430	451	483
15.0	504	511	538	576	505	512	539	577	507	514	540	578

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	45	45	46	48	48	48	49	51	50	50	52	54
1.0	58	58	60	63	61	62	64	67	65	66	68	72
2.5	99	100	104	110	103	104	108	114	108	109	113	119
5.0	176	179	187	199	179	181	190	202	183	185	193	205
7.5	257	261	274	293	259	263	275	294	262	265	278	297
10.0	340	344	362	387	341	346	363	388	343	348	365	390
12.5	422	428	450	482	424	430	451	483	425	431	453	485
15.0	506	513	539	577	507	514	540	578	508	515	541	579

TABLE H-6 (1,1,1,15 DEGREES)

TARGET ERROR = 1 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	11	12	15	19	14	16	19	22	17	19	23	26
1.0	14	17	23	31	18	21	27	34	22	24	30	37
2.5	25	32	50	67	28	35	53	72	32	38	55	75
5.0	45	58	85	104	48	61	94	123	50	64	99	133
7.5	63	79	107	123	67	86	127	156	70	91	138	177
10.0	78	95	120	133	86	108	151	177	90	115	169	208
12.5	91	107	129	138	103	127	168	190	108	138	194	230
15.0	101	116	134	142	118	142	180	199	126	157	213	246

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	15	16	18	21	19	20	22	24	23	23	25	28
1.0	17	19	25	33	21	23	28	35	25	27	32	38
2.5	27	34	51	68	30	36	54	73	33	39	56	76
5.0	46	59	88	110	49	62	95	125	51	65	100	134
7.5	65	81	113	132	68	88	129	160	71	91	139	179
10.0	81	99	129	144	87	110	154	183	90	116	171	211
12.5	95	113	139	151	104	129	172	197	109	139	196	234
15.0	106	123	146	156	119	145	186	207	127	159	216	250

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	23	23	25	27	26	26	28	30	29	30	31	33
1.0	24	26	30	37	27	28	33	39	31	32	36	42
2.5	32	38	54	73	34	40	56	75	37	43	59	78
5.0	50	63	94	121	52	65	98	130	54	67	102	137
7.5	68	87	124	152	71	90	134	170	73	93	142	184
10.0	86	107	146	170	90	114	163	197	92	118	175	220
12.5	102	125	162	182	107	135	185	216	111	142	203	245
15.0	116	139	173	189	124	153	201	228	129	163	225	264

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	32	33	35	34	34	35	37	37	37	38	39
1.0	33	34	37	43	35	36	39	45	38	39	42	47
2.5	39	44	59	77	41	45	61	79	43	48	63	81
5.0	54	67	100	131	56	69	102	136	58	71	105	141
7.5	73	92	135	170	74	94	141	182	76	96	146	191
10.0	91	115	163	197	93	118	173	215	95	121	181	231
12.5	108	135	185	216	112	141	199	238	114	145	212	260
15.0	125	153	201	228	129	161	220	255	133	168	237	283

TABLE H-6 (1,1,1,15 DEGREES) (continued)

TARGET ERROR = 2 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	14	14	17	20	18	18	21	23	21	22	24	27
1.0	20	21	27	34	23	25	30	36	27	29	33	39
2.5	41	45	58	72	43	48	61	78	46	50	64	81
5.0	72	78	95	110	78	86	108	131	81	90	115	143
7.5	95	101	116	127	108	118	142	164	115	126	157	188
10.0	111	116	128	136	132	142	165	184	144	157	190	219
12.5	121	125	135	140	151	160	181	195	169	182	214	239
15.0	128	132	139	143	166	174	191	203	190	202	232	253

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	17	17	19	22	21	21	23	25	24	25	27	29
1.0	22	23	28	35	25	27	31	38	29	30	34	40
2.5	42	46	59	74	44	49	62	79	47	51	65	82
5.0	74	81	99	116	79	87	110	134	82	90	116	144
7.5	99	106	123	137	110	119	145	169	116	127	159	190
10.0	117	123	138	148	135	145	170	190	145	158	192	222
12.5	129	135	146	154	155	164	187	203	171	184	217	244
15.0	138	143	152	158	170	179	198	212	192	205	236	259

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	26	28	27	27	28	30	30	31	32	34
1.0	28	29	33	39	30	31	35	41	34	35	38	44
2.5	46	50	63	78	48	52	65	81	50	54	67	84
5.0	79	86	107	129	82	90	114	140	84	92	118	148
7.5	107	116	139	159	113	124	153	180	118	129	163	197
10.0	130	139	160	176	141	152	181	206	148	162	198	232
12.5	147	155	174	187	163	175	202	223	175	189	226	256
15.0	160	167	183	193	182	192	217	234	198	212	247	274

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	33	34	35	35	35	36	37	37	38	39	40
1.0	35	36	40	45	37	38	42	47	40	41	44	49
2.5	51	54	67	83	52	56	69	85	55	58	71	87
5.0	83	91	115	140	85	93	118	147	87	95	121	152
7.5	114	125	153	180	118	129	161	193	121	133	168	205
10.0	141	153	182	206	147	160	195	226	153	167	206	244
12.5	164	175	202	223	173	186	220	248	181	197	237	273
15.0	182	193	217	235	195	208	240	264	206	222	262	295

TABLE H-6 (1,1,1,15 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	19	22	20	21	22	25	24	25	26	29
1.0	26	27	32	37	29	30	34	40	33	34	37	43
2.5	56	59	68	79	60	63	73	86	62	65	76	91
5.0	94	97	106	116	106	111	126	142	113	118	136	157
7.5	115	118	125	132	140	145	159	174	154	161	181	203
10.0	127	129	134	139	164	168	180	191	187	193	212	232
12.5	134	136	139	143	180	183	193	201	211	217	234	250
15.0	139	140	142	145	190	193	201	208	230	235	249	262

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	19	21	24	23	23	24	27	26	27	28	30
1.0	28	29	33	39	31	32	36	41	34	35	39	44
2.5	58	60	70	81	61	64	74	88	63	66	77	91
5.0	98	101	112	123	108	112	128	145	113	119	137	159
7.5	122	125	134	143	143	148	163	179	156	162	183	205
10.0	137	139	146	152	168	173	186	198	189	196	215	236
12.5	146	148	153	157	185	189	200	210	215	221	238	255
15.0	151	153	157	160	197	200	209	217	234	239	254	268

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	25	26	27	29	28	29	30	32	32	32	33	35
1.0	33	34	37	42	35	36	39	45	38	39	42	47
2.5	61	64	74	87	63	66	76	90	65	68	79	93
5.0	105	110	123	139	111	116	133	153	115	121	140	163
7.5	137	142	154	167	150	156	174	193	159	166	188	213
10.0	158	162	173	183	179	185	201	217	195	202	224	247
12.5	173	176	184	192	200	205	219	232	223	230	250	270
15.0	182	185	191	197	215	220	231	242	245	251	268	285

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	33	34	35	36	36	36	37	38	38	39	40	41
1.0	39	40	43	48	41	42	45	50	44	44	47	52
2.5	65	68	78	92	67	70	80	94	69	72	82	96
5.0	112	117	134	153	116	121	139	161	118	124	143	168
7.5	151	156	174	193	158	164	185	208	164	171	195	223
10.0	179	185	201	217	192	198	219	240	203	211	235	262
12.5	200	205	219	232	218	224	243	260	234	242	265	289
15.0	215	220	231	242	238	243	259	274	259	266	288	309

TABLE H-6 (1,1,1,15 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	21	24	23	23	25	27	27	27	29	31
1.0	33	34	37	42	35	36	40	45	38	39	43	47
2.5	70	72	78	87	76	78	86	97	79	81	90	102
5.0	109	111	116	122	130	132	142	154	141	144	157	173
7.5	127	128	132	136	163	166	174	183	186	190	202	217
10.0	136	136	139	141	183	185	191	198	217	221	231	244
12.5	140	141	143	144	195	197	201	206	238	241	250	260
15.0	143	144	145	146	203	204	208	212	253	255	262	270

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	22	23	26	25	25	27	29	29	29	30	32
1.0	34	35	38	43	37	38	41	46	40	40	44	48
2.5	72	74	81	90	77	79	87	98	80	82	90	102
5.0	115	117	123	131	132	135	145	158	142	145	158	175
7.5	137	138	143	148	167	170	179	189	188	192	205	221
10.0	148	149	152	155	189	191	198	206	221	224	235	248
12.5	154	155	157	159	203	204	210	215	243	246	255	266
15.0	158	158	160	161	211	213	217	221	258	261	268	277

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	29	31	30	30	31	33	33	34	35	36
1.0	38	39	42	47	40	41	44	49	43	44	47	51
2.5	76	79	86	96	79	82	90	101	82	84	92	104
5.0	127	130	139	149	137	141	152	167	145	148	162	180
7.5	158	160	167	176	178	182	192	205	194	198	212	230
10.0	176	177	183	189	205	208	217	227	230	234	247	262
12.5	186	188	192	196	223	225	232	240	255	259	270	282
15.0	193	194	197	200	234	236	242	248	273	276	285	295

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	35	35	36	38	37	37	38	40	40	40	41	42
1.0	44	45	48	52	46	47	49	54	48	49	52	56
2.5	81	83	91	102	83	85	93	105	85	87	95	107
5.0	138	141	153	167	144	147	160	177	149	153	167	186
7.5	179	182	193	205	191	195	208	224	202	206	222	242
10.0	205	208	217	227	224	228	240	253	242	246	262	280
12.5	223	225	232	240	247	250	260	271	272	276	289	305
15.0	234	236	242	248	263	266	274	283	293	297	309	321

ABLE H-6 (1,1,1,15 DEGREES) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGR IN SECONDS				SIGR IN SECONDS				SIGR IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	23	23	24	26	26	26	27	29	30	30	31	33
1.0	39	40	43	47	42	43	46	50	45	46	48	53
2.5	83	84	88	94	91	93	99	107	95	97	104	114
5.0	119	120	123	127	148	150	156	164	165	167	176	188
7.5	134	134	136	139	179	180	185	191	210	212	220	231
10.0	140	141	142	143	195	196	199	204	238	240	246	254
12.5	144	144	145	146	204	205	208	210	256	257	262	268
15.0	146	146	146	147	210	210	212	214	267	268	272	276

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGR IN SECONDS				SIGR IN SECONDS				SIGR IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	25	26	28	27	28	29	31	31	31	32	34
1.0	41	42	44	48	43	44	47	51	46	47	49	53
2.5	85	87	92	98	92	94	100	109	96	98	105	114
5.0	127	129	132	137	151	153	160	169	166	169	178	190
7.5	145	146	149	152	184	186	191	198	213	216	224	235
10.0	154	154	156	158	202	204	207	212	242	244	251	259
12.5	158	159	160	161	213	214	217	220	261	263	268	274
15.0	161	161	162	163	219	220	222	225	273	274	278	283

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGR IN SECONDS				SIGR IN SECONDS				SIGR IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	30	31	33	32	33	34	35	35	36	37	38
1.0	44	45	48	52	46	47	50	54	49	50	52	56
2.5	91	92	98	106	95	97	103	112	98	100	107	117
5.0	144	146	152	159	159	162	170	180	171	173	183	196
7.5	172	173	177	182	199	201	208	216	221	224	233	246
10.0	186	187	190	193	222	224	229	235	255	257	265	275
12.5	194	195	197	199	236	237	241	246	276	278	284	292
15.0	199	199	201	203	245	246	249	252	291	292	297	303

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGR IN SECONDS				SIGR IN SECONDS				SIGR IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	37	37	38	39	39	39	40	41	42	42	43	44
1.0	50	50	53	56	51	52	54	58	53	54	56	60
2.5	96	98	104	113	99	100	107	117	101	103	110	120
5.0	160	162	170	180	169	171	180	193	176	179	190	204
7.5	199	201	208	216	216	219	227	239	232	235	246	260
10.0	222	224	229	235	247	249	256	265	271	274	283	295
12.5	236	237	241	246	266	268	274	280	297	300	308	317
15.0	245	246	249	252	279	281	285	290	316	317	324	332

TABLE H-7 (1,1,1,30 DEGREES)

TARGET ERROR = 1 SECOND

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	10	11	15	19	11	13	18	22	11	14	20	24
1.0	14	17	23	30	17	20	26	34	19	22	29	37
2.5	25	31	44	54	28	35	50	64	31	38	54	71
5.0	41	49	62	68	46	57	78	91	50	62	88	107
7.5	52	60	69	72	62	74	92	102	67	82	110	126
10.0	60	65	72	74	74	85	100	107	82	98	123	135
12.5	64	69	73	75	83	93	104	109	95	110	131	141
15.0	67	71	74	75	89	98	107	111	105	119	137	144

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	15	15	18	21	17	18	21	24	19	20	23	27
1.0	17	19	25	32	20	22	28	35	22	25	31	38
2.5	27	33	46	57	30	36	51	66	33	39	55	71
5.0	43	52	66	74	47	58	80	94	51	63	89	109
7.5	55	64	75	79	63	76	95	106	68	83	111	128
10.0	64	71	79	82	75	88	104	111	83	100	125	138
12.5	69	75	81	83	85	96	109	114	96	112	134	144
15.0	73	78	82	83	92	102	112	116	106	121	140	148

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	23	23	25	27	25	26	27	29	28	28	30	32
1.0	24	26	30	36	27	28	33	39	29	31	36	42
2.5	32	37	51	64	34	40	55	69	37	43	58	74
5.0	47	57	76	87	51	62	85	102	54	65	92	114
7.5	61	72	89	97	66	80	104	117	70	86	116	136
10.0	72	82	95	101	80	94	115	124	86	103	132	147
12.5	80	89	99	103	91	104	121	128	99	117	142	154
15.0	86	94	102	104	99	111	125	131	110	127	149	159

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	32	33	35	34	34	35	37	36	36	37	39
1.0	33	34	37	43	35	36	39	45	37	38	42	47
2.5	39	43	57	71	41	45	59	74	43	48	62	78
5.0	53	63	86	102	55	66	91	111	58	69	97	120
7.5	68	81	104	117	71	86	114	131	74	90	123	146
10.0	81	95	115	124	86	102	128	142	90	109	141	160
12.5	91	104	121	128	98	114	137	148	104	124	154	169
15.0	100	111	125	131	108	124	143	151	116	136	162	175

TABLE H-7 (1,1,1,30 DEGREES) (continued)

TARGET ERROR = 2 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	13	14	17	20	16	17	20	23	17	19	22	26
1.0	20	21	26	32	23	25	30	36	26	28	33	39
2.5	38	41	49	56	42	46	57	68	46	50	62	76
5.0	57	60	65	69	69	74	85	94	76	82	98	113
7.5	66	67	71	73	85	89	98	104	98	105	119	130
10.0	70	71	73	74	95	98	104	108	114	119	130	138
12.5	72	73	74	75	101	103	107	110	124	128	137	143
15.0	73	74	75	76	104	106	109	111	131	134	141	145

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	17	17	19	22	19	20	22	25	21	22	25	28
1.0	22	23	28	34	25	26	31	37	28	29	34	40
2.5	40	43	52	60	44	47	58	70	47	51	63	76
5.0	60	64	71	76	70	75	88	97	77	83	100	114
7.5	71	73	78	80	88	92	102	108	100	106	121	132
10.0	76	78	81	82	98	102	108	113	116	121	133	141
12.5	79	80	82	83	105	107	112	115	126	131	140	146
15.0	81	81	83	84	109	111	115	117	134	137	145	149

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	26	28	26	27	28	30	29	29	31	33
1.0	28	29	33	38	30	31	35	41	33	34	38	44
2.5	44	47	57	67	47	51	62	74	50	54	65	79
5.0	68	72	82	90	74	80	94	106	80	86	103	120
7.5	83	86	94	99	94	99	111	120	103	110	127	140
10.0	91	94	99	102	107	111	120	126	121	127	141	151
12.5	96	98	102	104	115	119	126	130	133	138	150	157
15.0	99	101	103	105	121	124	129	132	142	146	155	161

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	33	34	35	34	35	36	37	37	37	38	40
1.0	35	36	40	44	37	38	42	46	40	41	44	49
2.5	50	53	63	75	52	55	66	79	54	58	69	83
5.0	76	81	95	106	80	86	102	117	83	90	109	127
7.5	95	100	111	120	102	108	124	135	109	116	136	151
10.0	107	112	121	127	118	124	136	145	128	135	152	165
12.5	115	119	126	130	129	134	144	150	142	149	163	173
15.0	121	124	129	132	136	140	148	153	153	158	170	177

TABLE H-7 (1,1,1,30 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	19	21	19	20	22	25	22	23	25	28
1.0	26	27	31	35	29	30	34	39	32	33	37	43
2.5	49	50	55	60	56	58	66	74	61	63	72	82
5.0	65	66	69	71	84	86	92	98	97	100	109	119
7.5	71	71	73	74	97	99	103	106	118	121	128	134
10.0	73	73	74	75	104	105	107	109	130	132	137	141
12.5	74	74	75	75	107	108	110	111	137	138	142	145
15.0	75	75	75	76	109	110	111	112	141	142	145	147

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	19	21	24	22	22	24	27	24	25	27	30
1.0	28	29	32	37	31	32	35	41	34	35	39	44
2.5	51	53	58	64	57	60	67	76	62	64	73	83
5.0	70	71	75	78	87	89	95	102	98	102	111	121
7.5	77	78	80	81	101	103	107	111	120	123	130	137
10.0	80	81	82	83	108	109	112	115	133	135	140	145
12.5	82	82	83	84	112	113	115	117	140	141	145	149
15.0	83	83	84	84	114	115	116	118	144	146	149	151

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	25	26	27	29	28	28	30	31	31	31	32	34
1.0	32	33	37	41	35	36	39	44	38	39	42	47
2.5	56	58	65	72	61	63	71	80	64	67	75	86
5.0	82	84	89	94	93	96	104	111	102	105	116	127
7.5	93	94	98	101	111	113	118	123	126	129	138	146
10.0	99	100	102	103	120	122	125	129	140	143	149	155
12.5	102	102	104	105	125	127	129	132	149	151	156	160
15.0	103	104	105	106	129	129	132	133	155	156	160	163

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	33	34	35	36	35	36	37	38	38	38	39	41
1.0	39	40	43	47	41	42	45	49	44	44	47	52
2.5	62	65	72	81	65	67	76	86	68	70	79	90
5.0	94	96	104	111	101	104	113	124	107	111	123	136
7.5	111	113	118	123	123	125	133	140	134	138	148	158
10.0	120	122	126	129	136	138	143	148	151	154	162	170
12.5	125	127	129	132	143	145	149	153	162	165	171	176
15.0	129	129	132	133	148	149	152	155	169	171	176	180

TABLE H-7 (1,1,1,30 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	21	24	23	23	25	27	26	26	28	30
1.0	32	32	35	39	35	36	39	44	38	39	43	47
2.5	56	57	60	63	68	69	74	79	74	76	82	90
5.0	69	70	71	72	94	95	98	101	112	114	119	125
7.5	73	73	74	74	104	104	106	108	130	131	134	138
10.0	74	75	75	75	108	108	109	111	138	139	141	144
12.5	75	75	75	76	110	110	111	112	143	143	145	147
15.0	76	76	76	76	111	112	112	113	145	146	147	148

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	22	23	26	25	25	26	29	27	28	29	32
1.0	33	34	37	41	37	37	40	45	40	40	44	48
2.5	59	60	64	67	69	70	75	82	75	77	83	91
5.0	76	76	78	79	97	98	102	105	114	116	121	127
7.5	80	81	81	82	108	109	111	113	132	134	137	141
10.0	82	82	83	83	113	113	115	116	141	142	145	147
12.5	83	83	84	84	115	116	117	117	146	147	149	151
15.0	84	84	84	84	117	117	118	118	149	150	151	152

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	29	31	30	30	31	33	33	33	34	36
1.0	38	38	41	45	40	41	44	48	43	44	47	51
2.5	67	68	72	77	73	74	80	87	78	80	86	94
5.0	90	91	94	96	106	107	111	116	119	121	127	134
7.5	99	99	101	102	120	121	124	126	140	142	146	151
10.0	102	103	103	104	127	127	129	131	151	152	155	158
12.5	104	104	105	106	130	130	132	133	157	158	160	162
15.0	105	105	106	106	132	132	133	134	161	161	163	165

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	35	35	36	38	37	37	38	40	39	40	41	42
1.0	44	44	47	51	46	46	49	53	48	49	52	56
2.5	74	76	81	88	78	80	86	94	82	83	90	99
5.0	106	107	112	116	116	118	124	130	126	128	135	144
7.5	120	121	124	126	135	136	140	145	151	153	158	164
10.0	127	127	129	131	145	146	148	151	165	166	170	174
12.5	130	130	132	133	150	151	153	155	173	173	176	179
15.0	132	132	133	134	153	154	155	157	177	178	180	183

TABLE H-7 (1,1,1,30 DEGREES) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	22	23	24	26	26	26	27	29	29	29	31	33
1.0	37	38	40	43	41	42	44	48	45	45	48	52
2.5	61	62	63	65	77	78	81	85	86	87	92	98
5.0	72	72	72	73	100	100	102	104	122	123	126	130
7.5	74	74	75	75	107	107	108	109	136	137	139	141
10.0	75	75	75	76	110	110	111	111	143	143	144	146
12.5	76	76	76	76	112	112	112	112	146	146	147	148
15.0	76	76	76	76	112	112	113	113	148	148	149	149

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	24	25	26	28	27	28	29	31	30	31	32	34
1.0	39	39	42	45	42	43	46	49	46	46	49	53
2.5	66	66	68	70	79	79	83	87	87	88	93	99
5.0	79	79	80	81	104	104	106	108	125	126	129	133
7.5	82	82	82	83	112	112	113	114	140	140	142	145
10.0	83	83	84	84	115	116	116	117	146	147	148	150
12.5	84	84	84	84	117	117	118	118	150	150	151	152
15.0	84	84	84	85	118	118	118	119	152	152	153	153

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	30	30	31	33	32	32	34	35	35	35	36	38
1.0	43	44	46	49	46	47	49	52	49	49	52	56
2.5	75	76	78	82	83	85	88	93	90	91	96	103
5.0	95	96	97	99	114	115	117	120	131	132	136	141
7.5	102	102	103	103	125	126	127	129	149	149	152	155
10.0	104	104	105	105	130	130	131	132	157	157	159	161
12.5	105	105	106	106	132	133	133	134	161	162	163	164
15.0	106	106	106	106	134	134	134	135	164	164	165	166

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	37	37	38	39	39	39	40	41	41	42	42	44
1.0	49	49	52	55	51	52	54	57	53	54	56	60
2.5	84	85	89	94	90	91	95	101	94	96	101	108
5.0	114	115	117	120	127	128	132	136	140	141	146	152
7.5	125	126	127	129	143	143	146	148	162	163	166	170
10.0	130	130	131	132	150	150	152	154	172	173	175	178
12.5	132	133	133	134	154	154	155	156	178	179	180	182
15.0	134	134	134	135	156	156	157	158	182	182	183	184

TABLE H-8 (1,1,1,45 DEGREES)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	8	10	14	18	9	11	16	21	9	11	17	23
1.0	13	16	23	29	15	19	26	33	16	20	29	37
2.5	25	30	39	44	28	34	47	57	31	38	53	65
5.0	37	42	47	50	44	52	64	70	49	59	77	87
7.5	43	47	50	51	55	62	71	75	63	74	89	96
10.0	47	49	51	52	62	68	74	76	74	83	94	99
12.5	49	50	52	52	67	71	76	77	81	89	98	101
15.0	50	51	52	52	70	73	76	78	86	93	100	102

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	14	15	18	21	15	16	20	23	16	17	21	25
1.0	17	19	25	31	19	21	28	35	20	23	30	38
2.5	27	32	41	47	30	36	48	58	33	39	54	66
5.0	39	45	52	55	46	54	67	73	50	60	78	89
7.5	47	51	55	57	57	64	74	78	64	75	90	98
10.0	51	54	57	58	64	71	77	80	75	85	97	102
12.5	53	55	57	58	69	74	79	81	83	91	100	104
15.0	55	56	58	58	73	77	80	81	88	95	102	105

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	23	25	27	24	25	27	29	26	26	28	31
1.0	24	26	30	36	26	28	33	39	28	30	35	42
2.5	32	36	47	55	34	40	52	63	37	42	57	70
5.0	45	52	62	67	49	58	73	81	53	63	82	94
7.5	54	60	68	71	61	70	82	87	67	79	96	105
10.0	60	65	70	72	70	78	87	90	79	89	103	109
12.5	64	68	71	73	76	82	89	92	87	96	108	112
15.0	67	69	72	73	80	85	91	92	93	101	110	113

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	31	32	33	35	33	33	35	36	35	35	37	38
1.0	32	34	37	42	34	35	39	44	36	37	42	47
2.5	38	43	54	64	41	45	58	69	43	48	61	74
5.0	51	59	73	81	54	63	80	91	58	67	88	102
7.5	62	71	82	88	67	77	93	100	72	84	104	114
10.0	71	78	87	90	77	87	99	105	84	96	113	121
12.5	76	83	89	92	85	93	103	107	93	104	118	124
15.0	81	86	91	92	90	97	105	108	100	110	121	126

TABLE H-8 (1,1,1,45 DEGREES) (continued)

TARGET ERROR = 2 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	12	13	16	20	14	15	19	22	15	16	20	24
1.0	20	21	26	31	23	24	30	36	25	27	33	39
2.5	35	37	42	45	41	44	52	59	46	49	59	69
5.0	46	47	49	50	60	62	68	72	70	74	83	90
7.5	49	50	51	52	68	70	73	75	83	86	93	97
10.0	51	51	52	52	72	73	75	77	91	93	98	100
12.5	51	52	52	52	74	75	77	77	95	97	100	102
15.0	52	52	52	52	76	76	77	78	98	99	101	103

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	19	22	18	19	21	24	19	20	23	27
1.0	22	23	28	33	25	26	31	37	27	29	34	40
2.5	37	39	45	49	43	46	54	61	47	50	60	70
5.0	49	51	54	55	62	64	71	75	71	75	85	92
7.5	54	55	56	57	71	73	77	79	85	88	95	100
10.0	56	56	57	58	75	77	79	80	93	95	100	103
12.5	57	57	58	58	78	79	80	81	97	99	103	105
15.0	57	57	58	58	79	80	81	82	100	102	104	106

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	26	28	26	26	28	30	27	28	30	32
1.0	28	29	33	37	30	31	35	41	32	34	38	44
2.5	42	45	52	57	46	49	58	66	50	53	63	73
5.0	58	60	65	68	67	70	78	83	74	79	89	98
7.5	65	67	69	71	78	80	85	89	89	93	101	107
10.0	69	70	71	72	84	86	89	91	99	101	107	111
12.5	70	71	72	73	87	88	91	92	104	106	110	113
15.0	71	72	73	73	89	90	92	93	108	109	112	114

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	32	34	35	34	34	35	37	36	36	37	39
1.0	35	36	39	44	37	38	42	46	39	40	44	49
2.5	49	51	59	67	51	54	63	73	54	58	67	78
5.0	67	71	78	83	73	77	87	94	79	84	96	106
7.5	78	81	86	89	87	90	97	102	96	100	110	117
10.0	84	86	89	91	95	98	103	106	107	110	118	122
12.5	87	88	91	92	100	102	105	108	114	116	122	125
15.0	89	90	92	93	103	104	107	109	118	120	124	127

TABLE H-8 (1,1,1,45 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	19	21	18	19	21	24	20	20	23	27
1.0	25	26	29	33	29	30	34	39	32	33	37	43
2.5	41	42	45	47	52	53	58	62	58	60	67	74
5.0	49	49	50	51	68	69	71	73	83	84	89	93
7.5	51	51	51	52	73	74	75	76	93	94	97	99
10.0	52	52	52	52	75	76	77	77	97	98	100	101
12.5	52	52	52	52	77	77	77	78	100	100	102	103
15.0	52	52	52	52	77	77	78	78	101	102	103	103

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	19	21	23	21	22	24	26	23	23	26	29
1.0	27	28	31	35	31	32	35	40	33	35	39	44
2.5	44	45	48	51	53	55	60	64	59	61	68	75
5.0	54	54	55	56	70	71	74	77	84	86	91	95
7.5	56	56	57	57	76	77	79	80	95	96	99	102
10.0	57	57	58	58	79	79	80	81	100	101	103	104
12.5	58	58	58	58	80	81	81	82	103	103	104	105
15.0	58	58	58	58	81	81	82	82	104	105	105	106

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	25	26	27	29	27	28	29	31	29	30	31	34
1.0	32	33	36	40	35	36	39	44	38	39	42	47
2.5	51	52	56	60	57	59	64	70	62	64	71	79
5.0	65	66	68	69	77	79	82	85	89	91	96	101
7.5	69	70	71	72	85	86	88	90	101	102	106	109
10.0	71	72	72	73	89	89	91	92	107	108	110	112
12.5	72	72	73	73	91	91	92	93	110	111	113	114
15.0	73	73	73	73	92	92	93	93	112	113	114	115

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	33	34	35	36	35	36	37	38	37	38	39	40
1.0	39	40	42	46	41	42	45	49	43	44	47	52
2.5	58	60	65	71	62	64	70	77	66	68	75	84
5.0	78	79	82	86	86	88	93	97	95	97	104	110
7.5	85	86	88	90	97	98	102	104	110	111	116	120
10.0	89	89	91	92	102	103	105	107	117	119	122	124
12.5	91	91	92	93	105	106	107	108	122	123	125	127
15.0	92	92	93	93	107	107	108	109	124	125	127	128

TABLE H-8 (1,1,1,45 DEGREES) (continued)

TARGET ERROR = 4 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	21	23	22	23	24	27	24	25	27	29
1.0	30	31	33	36	35	36	39	42	38	39	42	47
2.5	45	46	47	48	59	60	62	65	68	70	74	79
5.0	50	51	51	51	72	72	73	75	90	91	93	96
7.5	52	52	52	52	75	76	76	77	97	98	99	100
10.0	52	52	52	52	77	77	77	78	100	101	101	102
12.5	52	52	52	52	77	78	78	78	102	102	103	103
15.0	52	52	52	52	78	78	78	78	103	103	103	104

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	22	23	25	24	25	26	28	26	27	29	31
1.0	32	33	35	38	36	37	40	43	40	40	44	48
2.5	49	49	51	52	61	62	64	68	70	71	75	80
5.0	56	56	56	57	75	75	77	78	92	93	95	98
7.5	57	57	57	58	79	79	80	81	100	100	102	103
10.0	58	58	58	58	81	81	81	81	103	103	104	105
12.5	58	58	58	58	81	81	82	82	105	105	106	106
15.0	58	58	58	58	82	82	82	82	106	106	106	107

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	29	31	30	30	31	33	32	32	34	36
1.0	37	38	40	43	40	41	43	47	43	44	47	51
2.5	57	58	60	63	66	67	70	74	73	74	79	84
5.0	68	69	70	71	83	84	86	87	98	99	101	105
7.5	71	71	72	72	89	89	90	91	107	108	109	111
10.0	72	73	73	73	91	91	92	92	111	111	112	113
12.5	73	73	73	73	92	92	93	93	113	113	114	115
15.0	73	73	74	74	93	93	93	94	114	114	115	115

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	35	35	36	38	37	37	38	40	39	39	40	42
1.0	43	44	46	49	46	46	49	52	48	49	52	55
2.5	66	67	71	74	72	73	77	82	77	79	84	90
5.0	83	84	86	87	94	95	98	100	106	107	110	114
7.5	89	89	90	91	102	103	104	106	117	118	120	122
10.0	91	91	92	92	106	106	107	108	123	123	124	126
12.5	92	92	93	93	108	108	108	109	125	126	127	128
15.0	93	93	93	94	109	109	109	110	127	127	128	129

TABLE H-8 (1,1,1,45 DEGREES) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	23	24	26	26	26	27	29	28	28	30	32
1.0	34	35	36	38	40	41	43	46	45	45	48	51
2.5	47	48	48	49	64	64	66	68	76	77	80	83
5.0	51	51	51	52	74	74	75	75	94	95	96	98
7.5	52	52	52	52	77	77	77	77	100	100	101	101
10.0	52	52	52	52	77	78	78	78	102	102	102	103
12.5	52	52	52	52	78	78	78	78	103	103	103	104
15.0	52	52	53	53	78	78	78	78	104	104	104	104

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	25	26	27	27	28	29	31	30	30	32	34
1.0	36	37	38	40	42	42	44	47	46	46	49	52
2.5	52	52	53	54	66	67	68	70	78	78	81	84
5.0	57	57	57	57	77	78	78	79	97	97	98	100
7.5	58	58	58	58	80	80	81	81	102	103	103	104
10.0	58	58	58	58	81	81	82	82	105	105	105	106
12.5	58	58	58	58	82	82	82	82	106	106	106	107
15.0	58	58	58	58	82	82	82	82	106	107	107	107

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	30	31	32	32	32	33	35	35	35	36	38
1.0	41	42	44	46	45	46	48	51	49	49	51	55
2.5	62	62	63	65	72	73	75	77	81	82	85	89
5.0	70	70	71	71	87	87	88	89	103	104	105	107
7.5	72	72	73	73	91	91	91	92	110	110	111	112
10.0	73	73	73	73	92	92	93	93	113	113	114	114
12.5	73	73	73	74	93	93	93	93	114	115	115	115
15.0	74	74	74	74	93	93	94	94	115	115	116	116

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	37	37	38	39	39	39	40	41	41	41	42	44
1.0	48	48	50	53	50	51	53	56	53	54	56	59
2.5	73	73	75	78	80	80	83	87	87	88	91	95
5.0	87	87	88	89	99	100	101	103	113	113	115	118
7.5	91	91	91	92	105	105	106	107	122	122	123	124
10.0	92	92	93	93	108	108	108	109	125	126	126	127
12.5	93	93	93	93	109	109	109	110	127	127	128	128
15.0	93	93	94	94	109	110	110	110	128	128	129	129

TABLE H-9 (1,1,1,75 DEGREES)

TARGET ERROR = 1 SECOND,
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	7	9	14	18	7	9	15	20	7	9	15	21
1.0	13	16	22	27	13	17	26	32	14	18	27	36
2.5	24	27	32	33	28	34	42	47	30	38	50	57
5.0	31	33	35	35	41	45	50	51	48	55	63	67
7.5	34	34	35	36	47	49	52	53	57	62	67	69
10.0	34	35	36	36	49	51	53	53	62	66	69	70
12.5	35	35	36	36	51	52	53	53	65	67	70	71
15.0	35	35	36	36	52	52	53	53	67	69	70	71

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	13	14	17	21	13	15	18	22	14	15	19	23
1.0	16	19	24	29	17	20	28	34	18	21	29	37
2.5	26	30	34	37	30	35	44	49	32	39	51	59
5.0	34	36	38	39	43	47	52	54	49	56	65	68
7.5	37	38	39	39	49	51	54	55	59	64	69	71
10.0	38	39	39	40	52	53	55	56	64	67	71	72
12.5	39	39	40	40	53	54	56	56	67	69	72	73
15.0	39	39	40	40	54	55	56	56	69	70	72	73

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	23	24	27	23	24	26	29	24	24	27	30
1.0	24	25	30	34	25	27	33	38	26	28	34	41
2.5	31	35	41	45	34	39	48	54	36	42	54	62
5.0	40	44	47	49	47	52	58	61	52	59	69	73
7.5	45	47	49	50	54	57	61	63	62	68	74	77
10.0	47	48	50	50	57	60	62	63	68	72	76	78
12.5	48	49	50	50	60	61	63	64	71	74	77	79
15.0	49	49	50	50	61	62	63	64	74	76	78	79

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	31	32	33	35	33	33	34	36	34	34	36	38
1.0	32	34	37	41	34	35	39	44	35	36	41	47
2.5	38	42	50	54	41	45	54	61	43	48	59	68
5.0	48	53	58	61	53	58	66	70	57	64	75	81
7.5	54	58	61	63	61	65	71	73	67	74	82	85
10.0	58	60	62	63	66	69	73	74	74	79	84	87
12.5	60	61	63	64	68	71	74	75	78	82	86	87
15.0	61	62	63	64	70	72	74	75	81	84	87	88

TABLE H-9 (1,1,1,75 DEGREES) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	12	13	16	19	12	13	17	22	12	14	18	23
1.0	20	21	25	28	22	24	30	35	23	25	32	39
2.5	30	31	33	34	39	41	45	48	45	48	55	60
5.0	34	34	35	35	48	49	51	52	60	62	66	68
7.5	35	35	35	36	51	52	52	53	66	67	69	70
10.0	35	35	36	36	52	52	53	53	68	69	70	70
12.5	36	36	36	36	53	53	53	53	69	70	70	71
15.0	36	36	36	36	53	53	53	53	70	70	71	71

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	16	19	22	16	17	20	24	17	18	21	25
1.0	22	23	27	30	24	26	31	36	25	27	34	40
2.5	33	34	36	37	41	43	47	50	46	49	56	61
5.0	38	38	39	39	50	52	53	54	62	64	67	69
7.5	39	39	39	40	53	54	55	56	67	69	70	72
10.0	39	39	40	40	55	55	56	56	70	71	72	72
12.5	39	40	40	40	55	55	56	56	71	72	72	73
15.0	40	40	40	40	56	56	56	56	72	72	73	73

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	23	24	25	28	25	25	27	30	25	26	28	31
1.0	28	29	32	36	30	31	35	40	31	33	38	44
2.5	39	40	44	46	45	47	52	56	49	52	59	65
5.0	46	47	48	49	56	57	60	62	66	68	72	75
7.5	48	49	49	50	60	61	62	63	72	74	76	77
10.0	49	49	50	50	62	62	63	64	75	76	77	78
12.5	50	50	50	50	63	63	64	64	77	77	78	79
15.0	50	50	50	50	63	63	64	64	78	78	79	79

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	32	34	35	33	34	35	37	35	35	36	39
1.0	35	36	39	43	37	38	42	46	39	40	44	49
2.5	46	48	53	56	50	53	58	63	54	57	64	71
5.0	56	58	60	62	64	66	69	71	71	74	79	82
7.5	60	61	62	63	69	70	72	74	79	81	84	86
10.0	62	62	63	64	72	72	74	74	83	84	86	87
12.5	63	63	64	64	73	74	74	75	85	86	87	88
15.0	63	63	64	64	74	74	75	75	86	87	88	88

TABLE H-9 (1,1,1,75 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	19	21	17	18	21	24	18	18	22	25
1.0	25	25	27	29	29	30	34	37	32	33	37	42
2.5	33	33	34	34	45	46	48	49	54	56	59	62
5.0	35	35	35	35	51	51	52	52	66	66	67	69
7.5	35	36	36	36	52	53	53	53	69	69	70	70
10.0	36	36	36	36	53	53	53	53	70	70	70	71
12.5	36	36	36	36	53	53	53	53	70	70	71	71
15.0	36	36	36	36	53	53	53	53	71	71	71	71

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	19	21	23	20	21	23	26	21	21	24	27
1.0	27	27	30	32	31	32	35	39	33	34	39	43
2.5	36	36	37	38	47	48	50	51	56	57	60	64
5.0	39	39	39	39	53	54	54	55	67	68	69	70
7.5	39	39	40	40	55	55	55	56	70	71	72	72
10.0	40	40	40	40	56	56	56	56	72	72	72	73
12.5	40	40	40	40	56	56	56	56	72	72	73	73
15.0	40	40	40	40	56	56	56	56	73	73	73	73

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	25	26	27	29	27	27	29	31	28	28	30	33
1.0	32	33	35	38	35	36	39	43	37	38	42	47
2.5	43	44	46	47	52	53	55	57	59	60	64	68
5.0	48	48	49	49	60	60	61	62	72	73	74	76
7.5	49	50	50	50	62	62	63	63	76	76	77	78
10.0	50	50	50	50	63	63	64	64	77	78	78	79
12.5	50	50	50	50	64	64	64	64	78	78	79	79
15.0	50	50	50	50	64	64	64	64	79	79	79	79

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	33	34	35	36	35	35	36	38	36	37	38	40
1.0	39	40	42	45	41	42	45	48	43	44	47	52
2.5	52	53	55	58	58	59	62	65	64	65	69	74
5.0	60	60	61	62	69	70	71	72	79	80	82	84
7.5	62	62	63	63	72	73	73	74	84	84	86	87
10.0	63	63	64	64	74	74	74	75	86	86	87	88
12.5	64	64	64	64	74	75	75	75	87	87	88	88
15.0	64	64	64	64	75	75	75	75	88	88	88	88

TABLE H-9 (1,1,1,75 DEGREES) (continued)

TARGET ERROR = 4 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	21	23	21	22	24	27	22	23	25	29
1.0	28	28	29	31	35	35	37	40	39	39	42	46
2.5	34	34	34	35	48	48	49	50	60	60	62	64
5.0	35	35	35	36	52	52	52	53	68	68	69	69
7.5	36	36	36	36	53	53	53	53	70	70	70	70
10.0	36	36	36	36	53	53	53	53	70	71	71	71
12.5	36	36	36	36	53	53	53	53	71	71	71	71
15.0	36	36	36	36	53	53	53	54	71	71	71	71

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	22	23	25	24	24	26	28	25	25	27	30
1.0	30	30	32	33	36	37	39	41	40	41	43	47
2.5	37	38	38	38	50	50	52	53	61	62	64	66
5.0	39	39	39	40	55	55	55	55	70	70	71	71
7.5	40	40	40	40	56	56	56	56	72	72	72	72
10.0	40	40	40	40	56	56	56	56	72	73	73	73
12.5	40	40	40	40	56	56	56	56	73	73	73	73
15.0	40	40	40	40	56	56	56	56	73	73	73	73

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	29	30	29	30	31	33	31	31	33	35
1.0	36	36	38	39	40	40	43	45	43	44	47	50
2.5	46	46	47	48	56	56	57	59	65	66	68	70
5.0	49	49	49	50	62	62	62	63	75	75	76	77
7.5	50	50	50	50	63	63	63	64	77	78	78	78
10.0	50	50	50	50	64	64	64	64	78	78	79	79
12.5	50	50	50	50	64	64	64	64	79	79	79	79
15.0	50	50	50	50	64	64	64	64	79	79	79	79

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	35	35	36	38	37	37	38	40	38	39	40	42
1.0	42	43	45	47	46	46	48	51	48	49	52	55
2.5	56	56	58	59	63	64	66	67	71	71	74	77
5.0	62	62	62	63	71	72	72	73	83	83	84	85
7.5	63	63	63	64	74	74	74	74	86	86	87	87
10.0	64	64	64	64	75	75	75	75	87	87	88	88
12.5	64	64	64	64	75	75	75	75	88	88	88	88
15.0	64	64	64	64	75	75	75	75	88	88	89	89

TABLE H-9 (1,1,1,75 DEGREES) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER:

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	22	24	25	25	26	27	29	27	27	29	32
1.0	30	30	31	32	39	39	40	42	44	45	47	49
2.5	35	35	35	35	50	50	50	51	63	63	64	66
5.0	36	36	36	36	53	53	53	53	69	69	69	70
7.5	36	36	36	36	53	53	53	53	70	70	71	71
10.0	36	36	36	36	53	53	53	53	71	71	71	71
12.5	36	36	36	36	53	53	53	53	71	71	71	71
15.0	36	36	36	36	53	53	54	54	71	71	71	71

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	26	27	27	28	29	31	29	29	31	33
1.0	32	33	33	34	40	40	42	44	45	46	48	51
2.5	38	38	39	39	52	52	53	53	65	65	66	67
5.0	39	39	40	40	55	55	55	56	71	71	71	72
7.5	40	40	40	40	56	56	56	56	72	72	73	73
10.0	40	40	40	40	56	56	56	56	73	73	73	73
12.5	40	40	40	40	56	56	56	56	73	73	73	73
15.0	40	40	40	40	56	56	56	56	73	73	73	73

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	30	31	32	32	32	34	35	34	34	36	38
1.0	38	39	40	41	44	44	46	48	48	49	51	54
2.5	47	47	48	48	58	58	59	60	69	69	71	72
5.0	50	50	50	50	63	63	63	63	76	77	77	78
7.5	50	50	50	50	63	64	64	64	78	78	78	79
10.0	50	50	50	50	64	64	64	64	79	79	79	79
12.5	50	50	50	50	64	64	64	64	79	79	79	79
15.0	50	50	50	50	64	64	64	64	79	79	79	79

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	37	37	38	39	39	39	40	41	41	41	42	44
1.0	46	46	47	49	50	50	52	54	53	54	56	58
2.5	58	59	59	60	67	67	68	69	75	76	77	79
5.0	63	63	63	63	73	73	73	74	85	85	85	86
7.5	63	64	64	64	74	74	75	75	87	87	87	88
10.0	64	64	64	64	75	75	75	75	88	88	88	88
12.5	64	64	64	64	75	75	75	75	88	88	88	89
15.0	64	64	64	64	75	75	75	75	89	89	89	89

TABLE H-10 (1,1,1,1,15 DEGREES)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	9	11	13	16	12	13	16	19	13	15	19	22
1.0	12	14	20	27	16	18	23	29	18	21	26	32
2.5	22	28	42	55	24	30	45	61	28	33	48	64
5.0	38	48	68	81	41	53	78	99	44	55	84	110
7.5	53	64	83	92	57	73	102	122	60	77	114	142
10.0	64	75	91	98	72	89	118	134	76	97	136	162
12.5	73	83	95	101	85	102	129	142	91	114	153	175
15.0	79	88	98	102	96	113	136	146	105	128	165	184

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	13	14	16	18	16	17	19	21	19	19	22	24
1.0	15	17	22	28	18	20	24	30	21	23	27	33
2.5	23	29	43	57	26	31	46	62	29	34	48	65
5.0	40	50	71	86	42	53	80	102	44	56	85	111
7.5	54	67	88	100	58	74	104	125	61	78	115	144
10.0	67	79	98	107	73	91	121	139	77	98	138	165
12.5	76	88	104	110	86	105	133	147	92	115	155	179
15.0	84	95	108	113	98	116	141	153	106	130	168	188

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	20	20	21	23	22	23	24	26	25	25	27	28
1.0	21	22	26	32	23	25	28	34	26	27	31	36
2.5	28	33	47	61	30	34	49	64	32	37	51	67
5.0	43	53	78	97	45	56	83	107	47	58	87	114
7.5	58	72	100	117	61	76	110	135	63	80	118	149
10.0	72	88	114	128	76	95	130	152	79	100	143	173
12.5	84	100	123	135	90	110	144	163	94	118	162	189
15.0	94	109	130	139	102	123	154	170	109	134	176	200

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	29	30	29	30	30	32	32	32	33	34
1.0	28	29	32	37	30	31	34	39	33	33	36	41
2.5	33	38	51	66	35	39	52	68	37	41	54	70
5.0	47	57	84	107	48	59	87	113	50	61	90	118
7.5	62	78	111	135	64	80	117	146	66	82	122	156
10.0	77	95	130	152	79	99	140	168	82	103	149	183
12.5	91	111	144	163	94	117	158	182	97	122	170	202
15.0	103	123	154	170	108	132	171	192	112	139	187	216

TABLE H-10 (1,1,1,1,15 DEGREES) (continued)

TARGET ERROR = 2 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	12	12	14	17	15	16	18	20	18	18	21	23
1.0	17	19	23	29	20	21	26	31	23	25	29	34
2.5	35	38	48	59	37	41	53	66	40	44	55	69
5.0	59	64	75	85	66	72	89	105	70	76	97	118
7.5	75	79	88	95	89	96	113	127	96	105	128	149
10.0	85	88	95	99	106	113	127	138	119	128	150	169
12.5	91	94	99	102	119	124	136	144	137	145	166	181
15.0	95	97	101	103	128	132	142	148	151	159	176	189

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	15	15	17	19	18	18	20	22	21	21	23	25
1.0	19	20	25	30	22	23	27	32	25	26	30	35
2.5	36	40	50	61	38	42	53	67	41	44	56	70
5.0	62	67	79	90	67	73	91	108	70	77	98	119
7.5	79	84	95	103	91	98	116	131	97	106	130	151
10.0	91	95	103	109	109	116	131	143	120	129	153	172
12.5	99	102	108	112	122	128	141	151	138	147	169	185
15.0	103	106	111	114	132	137	148	155	153	161	180	193

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	21	21	22	24	23	23	25	26	26	26	27	29
1.0	24	25	29	34	26	27	31	36	29	30	33	38
2.5	39	43	53	66	41	45	56	69	43	47	58	72
5.0	66	72	88	103	69	76	95	114	72	79	100	122
7.5	88	94	109	122	95	102	123	141	99	109	134	158
10.0	104	109	122	132	115	123	142	157	123	133	159	181
12.5	115	120	130	137	130	138	155	167	143	153	177	196
15.0	123	127	135	141	142	149	164	173	159	168	190	206

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	28	29	30	30	30	31	32	32	33	33	35
1.0	30	31	34	39	32	33	36	40	35	35	38	42
2.5	44	47	57	71	45	48	59	73	47	50	61	75
5.0	71	77	95	114	73	79	99	121	75	82	103	127
7.5	95	103	123	141	99	108	132	154	103	112	139	166
10.0	115	123	142	157	122	131	155	175	128	138	167	192
12.5	131	138	155	167	140	150	172	189	149	160	188	211
15.0	143	149	164	173	155	164	184	197	167	178	204	223

TABLE H-10 (1,1,1,1,15 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	14	15	16	19	17	18	19	22	21	21	23	25
1.0	23	24	27	32	25	26	30	35	28	29	32	37
2.5	47	49	56	64	51	54	62	73	54	56	65	77
5.0	75	77	83	88	88	91	101	113	95	99	112	128
7.5	88	89	93	97	112	115	124	132	126	131	144	159
10.0	95	96	99	101	126	129	136	142	149	153	165	176
12.5	98	99	101	103	136	138	143	148	164	168	178	187
15.0	101	101	103	104	142	143	147	151	175	178	186	194

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	18	20	19	20	21	23	22	23	24	26
1.0	24	25	29	33	27	27	31	36	29	30	33	38
2.5	49	51	58	67	52	54	63	74	54	57	66	78
5.0	78	81	88	95	89	93	104	116	95	100	113	130
7.5	94	96	101	106	114	118	127	137	128	132	146	161
10.0	103	104	108	111	131	133	141	148	151	155	168	180
12.5	108	109	111	113	141	143	149	154	167	171	181	191
15.0	111	111	113	115	147	149	154	158	179	182	191	198

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	22	23	25	24	25	26	27	27	27	28	30
1.0	28	29	32	37	30	31	34	39	33	34	36	41
2.5	52	54	62	72	54	57	65	76	56	59	68	80
5.0	86	90	99	109	93	97	109	123	98	102	116	134
7.5	108	111	119	127	121	125	137	149	131	136	152	169
10.0	122	124	130	135	141	144	154	164	157	162	176	190
12.5	130	132	136	140	154	157	165	172	175	180	192	203
15.0	135	136	140	143	163	165	172	177	189	192	203	212

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	29	30	31	31	31	32	33	33	33	34	35
1.0	34	35	37	41	36	36	39	43	38	39	41	45
2.5	56	59	67	78	58	60	69	80	60	62	71	82
5.0	94	97	110	123	97	102	115	132	101	105	120	139
7.5	122	126	137	149	130	134	149	164	136	142	159	178
10.0	141	145	154	164	153	158	171	184	165	170	187	204
12.5	154	157	165	172	170	174	185	195	186	191	206	220
15.0	163	165	172	177	182	186	195	203	202	207	219	231

TABLE H-10 (1,1,1,1,15 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	17	17	19	21	20	20	21	23	23	23	25	26
1.0	28	29	32	36	31	31	34	39	33	34	37	41
2.5	58	59	64	70	64	66	72	80	68	70	76	86
5.0	84	85	88	92	104	106	113	120	116	119	128	139
7.5	95	95	97	99	126	128	132	138	148	151	159	168
10.0	99	100	101	102	138	139	142	146	168	170	176	183
12.5	102	102	103	104	144	145	148	150	180	182	187	192
15.0	103	103	104	104	148	149	151	153	188	190	194	198

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	19	20	22	21	22	23	25	25	25	26	28
1.0	29	30	33	37	32	33	35	40	34	35	38	42
2.5	60	62	67	73	65	67	73	82	68	70	77	87
5.0	90	91	95	99	107	109	116	124	117	120	129	141
7.5	103	103	106	109	130	132	137	143	150	153	161	171
10.0	109	109	111	113	143	144	148	152	171	173	180	187
12.5	112	112	113	115	150	151	154	157	184	186	191	197
15.0	114	114	115	116	155	156	158	160	193	194	198	203

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	25	27	26	26	27	29	29	29	30	31
1.0	33	34	36	40	35	36	38	42	37	38	41	44
2.5	65	66	72	80	68	69	76	85	70	72	79	89
5.0	102	104	109	116	112	115	123	133	120	123	133	146
7.5	121	123	127	131	140	142	149	157	156	159	168	180
10.0	132	132	135	139	157	158	164	169	180	182	190	199
12.5	137	138	140	142	167	168	172	176	195	197	203	210
15.0	141	141	143	144	173	174	177	180	205	207	212	217

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	30	31	33	32	32	33	34	34	35	35	37
1.0	38	39	41	45	40	40	43	46	42	42	45	48
2.5	69	71	77	86	71	73	79	89	73	75	82	92
5.0	113	115	123	133	119	122	131	143	124	128	138	152
7.5	141	143	149	157	153	155	164	174	164	167	178	191
10.0	157	159	164	169	174	176	184	191	191	194	204	215
12.5	167	168	172	176	188	190	195	202	210	212	220	229
15.0	173	174	177	180	197	199	203	208	223	225	231	238

TABLE H-10 (1,1,1,1,15 DEGREES) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	21	23	22	23	24	25	25	26	27	28
1.0	34	34	37	40	36	37	39	43	39	39	42	45
2.5	67	68	71	75	76	77	82	88	81	83	88	96
5.0	90	91	93	95	117	118	122	127	134	135	141	149
7.5	98	99	100	101	135	136	139	142	164	165	170	176
10.0	102	102	102	103	144	145	147	149	180	181	185	189
12.5	103	103	104	104	149	150	151	152	190	191	193	196
15.0	104	104	105	105	152	152	153	154	196	196	198	201

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	21	21	23	24	24	24	25	27	27	27	28	30
1.0	35	36	38	41	37	38	40	44	40	40	43	46
2.5	70	71	74	79	77	79	83	90	82	83	89	96
5.0	97	98	100	103	120	121	125	131	135	137	143	152
7.5	107	108	109	111	140	141	144	148	166	168	173	179
10.0	112	112	113	114	150	151	153	155	184	185	189	194
12.5	114	114	115	115	156	156	158	159	194	195	198	201
15.0	115	115	116	116	159	159	160	162	201	201	204	206

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	26	26	27	28	28	28	29	30	31	31	32	33
1.0	38	39	41	44	40	41	43	46	42	43	45	49
2.5	76	77	81	87	80	82	87	94	84	85	91	99
5.0	113	114	118	122	128	129	135	141	140	142	148	158
7.5	129	130	132	135	153	154	158	163	174	176	182	189
10.0	137	138	139	141	167	168	170	174	195	196	201	206
12.5	141	142	143	144	174	175	177	179	207	208	212	216
15.0	144	144	145	146	179	179	181	183	215	216	218	221

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	32	33	34	34	34	35	36	36	36	37	38
1.0	43	43	45	49	44	45	47	50	46	47	49	52
2.5	81	83	87	94	84	85	91	98	86	88	93	102
5.0	128	130	135	142	137	139	146	154	145	147	155	166
7.5	153	155	158	163	169	171	176	183	185	187	194	203
10.0	167	168	170	174	188	189	193	198	210	211	217	224
12.5	174	175	177	179	199	200	203	206	225	226	231	236
15.0	179	179	181	183	206	206	209	211	235	236	240	244

TABLE H-11 (1,1,1,1,30 DEGREES)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	8	9	13	16	8	10	15	18	9	11	16	20
1.0	12	14	20	26	14	16	23	29	15	18	25	32
2.5	22	26	36	42	24	30	42	52	27	33	46	59
5.0	34	39	47	50	39	48	61	69	43	53	72	84
7.5	41	46	51	52	51	59	70	75	57	68	86	95
10.0	46	49	52	53	59	66	74	78	68	79	93	100
12.5	48	51	53	54	65	70	77	79	76	86	98	103
15.0	50	52	53	54	69	73	78	80	83	91	101	104

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	12	13	15	18	14	15	17	20	15	16	19	22
1.0	15	17	22	27	17	19	24	30	18	21	27	33
2.5	23	28	38	45	26	31	43	54	28	34	47	60
5.0	36	42	51	55	40	49	63	72	44	53	73	86
7.5	44	49	55	58	52	61	73	78	57	69	87	97
10.0	49	53	57	59	61	68	78	81	69	80	95	103
12.5	53	56	59	60	67	73	80	83	77	88	100	106
15.0	55	57	59	60	71	76	82	84	84	93	103	107

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	20	20	21	23	21	22	23	25	23	24	25	27
1.0	21	22	26	31	23	24	28	34	25	26	31	36
2.5	27	32	43	52	30	34	46	58	32	37	50	62
5.0	40	47	60	66	43	52	68	79	46	56	76	90
7.5	50	57	67	71	55	65	80	87	60	72	92	103
10.0	57	64	71	73	65	74	86	91	71	84	101	110
12.5	62	67	73	75	72	80	90	93	81	92	107	113
15.0	66	70	74	75	78	85	92	95	88	99	111	116

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	28	28	30	29	29	30	32	31	31	32	34
1.0	28	29	32	37	30	31	34	39	32	33	36	41
2.5	33	37	48	59	35	39	51	62	37	41	53	66
5.0	45	53	69	79	48	56	75	88	50	59	80	96
7.5	57	66	80	88	60	71	89	99	63	76	98	112
10.0	66	75	86	91	71	82	98	105	75	89	110	120
12.5	73	81	90	93	79	90	103	108	86	99	117	125
15.0	78	85	92	95	86	95	106	110	94	106	121	128

TABLE H-11 (1,1,1,1,30 DEGREES) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	11	12	14	17	13	14	16	20	14	15	18	22
1.0	17	18	23	27	20	21	26	31	22	24	28	34
2.5	32	34	39	44	36	39	48	55	40	43	53	63
5.0	44	46	49	51	56	59	66	71	63	68	79	87
7.5	49	50	52	53	66	69	73	76	79	83	91	97
10.0	51	52	53	54	72	73	76	78	88	91	98	102
12.5	52	53	53	54	75	76	78	79	94	96	101	104
15.0	53	53	54	54	77	77	79	80	98	100	103	105

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	14	15	17	19	16	17	19	21	17	18	21	23
1.0	19	20	24	29	21	23	27	32	24	25	30	35
2.5	33	36	42	47	37	40	49	57	41	44	53	64
5.0	47	49	53	56	57	61	68	74	64	69	80	89
7.5	53	55	57	58	68	71	76	80	80	84	93	99
10.0	56	57	58	59	75	76	80	82	90	93	100	104
12.5	58	58	59	60	78	79	82	83	96	99	104	107
15.0	59	59	60	60	80	81	83	84	100	102	106	108

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	21	21	22	24	22	23	24	26	24	25	26	28
1.0	24	25	28	33	26	27	31	35	28	29	33	38
2.5	37	40	47	54	40	43	52	61	43	46	56	66
5.0	55	57	64	68	61	65	74	81	67	71	84	94
7.5	64	66	70	72	74	78	85	89	84	88	99	106
10.0	68	70	72	74	82	85	89	93	95	99	107	112
12.5	71	72	74	75	87	89	92	94	102	105	111	115
15.0	73	73	75	75	90	91	94	95	107	109	114	117

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	28	29	30	30	30	31	32	31	32	33	34
1.0	30	31	34	38	32	33	36	40	34	35	38	42
2.5	43	45	53	62	45	48	56	66	47	50	59	70
5.0	62	66	75	82	66	71	82	91	70	75	89	101
7.5	75	78	85	89	82	86	95	102	89	94	106	115
10.0	82	85	90	93	92	95	102	107	102	106	116	123
12.5	87	89	92	94	98	101	106	110	110	114	122	127
15.0	90	91	94	95	103	105	109	111	116	119	126	129

TABLE H-11 (1,1,1,1,30 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	14	15	16	19	16	17	19	21	18	19	21	24
1.0	22	23	26	30	25	26	30	34	28	29	32	37
2.5	39	40	43	46	47	48	54	59	52	54	60	68
5.0	49	49	51	52	66	67	70	73	78	80	86	91
7.5	52	52	53	53	73	74	76	77	91	92	96	100
10.0	53	53	53	54	76	77	78	79	97	98	101	103
12.5	53	54	54	54	78	78	79	80	101	102	103	105
15.0	54	54	54	54	79	79	80	80	103	104	105	106

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	18	20	19	19	21	23	20	21	23	25
1.0	24	25	28	31	27	27	31	35	29	30	33	38
2.5	41	43	46	49	48	50	55	61	52	54	61	69
5.0	53	54	56	57	68	69	73	76	79	81	87	93
7.5	57	57	58	59	76	77	79	81	93	94	98	102
10.0	58	59	59	60	80	80	82	83	100	101	104	106
12.5	59	59	60	60	82	82	83	84	103	104	106	108
15.0	60	60	60	60	83	83	84	84	106	106	108	109

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	22	23	25	24	24	25	27	26	26	28	29
1.0	28	29	32	35	30	31	34	38	33	33	36	41
2.5	47	48	53	57	51	53	59	65	55	57	64	72
5.0	63	64	67	70	74	75	80	85	83	85	92	99
7.5	70	70	72	73	84	85	88	91	98	100	105	109
10.0	72	73	74	75	89	90	92	94	106	108	111	114
12.5	74	74	75	75	92	93	94	95	111	112	114	116
15.0	75	75	75	76	94	94	95	96	114	114	116	118

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	29	30	31	31	31	32	33	33	33	34	35
1.0	34	34	37	41	36	36	39	43	38	38	41	45
2.5	52	54	60	66	55	57	63	71	58	60	67	76
5.0	74	76	80	85	81	83	89	95	88	90	98	106
7.5	84	85	88	91	95	96	101	105	105	108	114	119
10.0	89	90	92	94	102	103	106	109	116	117	122	126
12.5	92	93	94	95	106	107	109	111	122	123	126	129
15.0	94	94	95	96	109	109	111	112	125	126	129	131

TABLE H-11 (1,1,1,1,30 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	17	17	18	20	19	20	21	23	22	22	24	26
1.0	27	27	30	32	30	31	34	37	33	34	37	41
2.5	44	44	46	48	55	56	59	63	62	63	68	73
5.0	51	51	52	52	71	72	73	75	87	88	91	95
7.5	53	53	53	54	76	77	77	78	97	98	100	102
10.0	54	54	54	54	78	79	79	80	102	102	103	104
12.5	54	54	54	54	79	80	80	80	104	104	105	106
15.0	54	54	54	54	80	80	80	81	105	105	106	107

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	19	20	22	21	21	23	25	23	24	25	27
1.0	28	29	31	34	32	32	35	38	34	35	38	42
2.5	47	47	49	51	56	57	61	65	63	64	69	74
5.0	56	56	57	58	74	75	76	78	89	90	93	97
7.5	58	59	59	59	80	80	81	82	99	100	102	104
10.0	59	59	60	60	82	82	83	84	104	105	106	107
12.5	60	60	60	60	83	84	84	84	107	107	108	109
15.0	60	60	60	60	84	84	84	85	108	108	109	110

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	25	27	26	26	27	29	28	28	29	31
1.0	32	33	35	38	35	35	38	41	37	38	40	44
2.5	54	55	57	61	60	61	65	70	65	67	71	77
5.0	68	68	70	71	81	82	85	87	94	95	99	103
7.5	72	73	73	74	89	90	91	93	106	107	109	112
10.0	74	74	75	75	93	93	94	95	112	112	114	116
12.5	75	75	75	76	94	95	95	96	115	115	116	117
15.0	75	76	76	76	95	95	96	96	117	117	118	119

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	30	31	33	32	32	33	34	34	34	35	36
1.0	38	38	40	43	40	40	42	46	42	42	45	48
2.5	61	62	66	70	65	66	71	76	69	70	75	82
5.0	82	82	85	87	91	92	95	99	100	102	106	111
7.5	89	90	91	93	102	103	105	107	115	116	119	123
10.0	93	93	94	95	107	107	109	110	123	124	126	128
12.5	94	95	95	96	110	110	111	112	127	127	129	130
15.0	95	95	96	96	111	111	112	113	129	130	131	132

TABLE H-11 (1,1,1,1,30 DEGREES) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	21	22	22	23	24	25	25	25	26	28
1.0	31	31	33	35	35	36	38	41	39	39	41	45
2.5	47	47	48	49	61	61	63	66	70	71	74	78
5.0	52	52	53	53	74	75	75	76	93	94	95	97
7.5	53	53	54	54	78	78	79	79	101	101	102	103
10.0	54	54	54	54	79	80	80	80	104	104	105	105
12.5	54	54	54	54	80	80	80	81	105	106	106	106
15.0	54	54	54	54	81	81	81	81	106	106	107	107

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	21	21	22	24	24	24	25	27	26	26	28	29
1.0	33	33	35	37	36	37	39	42	40	40	42	45
2.5	51	51	52	53	63	63	65	68	72	72	75	80
5.0	57	58	58	58	77	78	79	80	95	96	98	100
7.5	59	59	59	60	82	82	82	83	103	104	105	106
10.0	60	60	60	60	83	83	84	84	107	107	108	108
12.5	60	60	60	60	84	84	84	85	108	109	109	109
15.0	60	60	60	60	85	85	85	85	109	109	110	110

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	26	26	27	28	28	28	29	30	30	30	31	33
1.0	37	37	39	41	39	40	42	45	42	43	45	48
2.5	59	60	61	63	68	68	71	74	74	75	79	83
5.0	71	71	72	72	86	86	88	89	101	102	104	106
7.5	74	74	74	75	92	92	93	94	111	111	112	114
10.0	75	75	75	75	94	94	95	95	115	115	116	117
12.5	76	76	76	76	95	96	96	96	117	117	118	118
15.0	76	76	76	76	96	96	96	97	118	118	119	119

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	32	33	34	34	34	35	36	36	36	37	38
1.0	42	42	44	47	44	44	46	49	46	47	49	52
2.5	68	69	71	74	73	74	77	81	79	80	83	88
5.0	86	87	88	89	97	98	100	102	109	110	113	116
7.5	92	92	93	94	106	106	107	109	121	122	123	125
10.0	94	94	95	95	110	110	110	111	127	127	128	130
12.5	95	96	96	96	111	112	112	113	130	130	131	132
15.0	96	96	96	97	112	113	113	113	131	132	132	133

TABLE H-12 (1,1,1,1,45 DEGREES)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	7	8	12	16	7	9	13	17	7	9	13	18
1.0	11	14	20	24	12	15	22	29	13	16	24	31
2.5	21	25	31	34	24	30	39	45	27	33	45	54
5.0	30	33	36	37	37	43	50	53	42	50	61	67
7.5	33	35	37	37	45	49	53	55	53	59	68	71
10.0	35	36	37	38	49	52	55	56	59	65	71	73
12.5	36	37	38	38	51	53	55	56	64	68	72	74
15.0	37	37	38	38	53	54	56	56	67	70	73	74

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	12	12	15	18	12	13	16	20	13	14	17	21
1.0	14	16	21	26	16	18	24	30	16	19	26	32
2.5	23	27	33	37	26	31	40	47	28	34	46	55
5.0	32	35	39	41	38	44	52	55	43	51	62	69
7.5	36	39	41	41	46	51	56	58	54	61	69	73
10.0	39	40	41	42	51	54	57	58	61	66	73	75
12.5	40	41	42	42	53	56	58	59	65	70	74	76
15.0	40	41	42	42	55	57	59	59	68	72	75	77

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	21	23	21	21	23	25	21	22	24	26
1.0	21	22	26	30	22	24	28	33	23	25	30	36
2.5	27	31	39	44	30	34	44	51	32	37	48	58
5.0	37	42	47	50	42	48	57	62	46	53	66	73
7.5	43	47	50	52	50	56	62	65	56	64	74	79
10.0	47	49	52	53	56	60	65	66	64	70	78	81
12.5	49	51	52	53	59	62	66	67	69	74	80	82
15.0	50	51	53	53	61	64	66	67	73	77	81	83

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	27	28	30	28	29	30	31	30	30	31	33
1.0	28	29	32	36	30	31	34	38	31	32	36	41
2.5	33	37	45	52	35	39	49	57	37	41	52	62
5.0	43	49	57	62	46	53	64	70	50	57	71	80
7.5	51	56	62	65	56	62	71	75	60	69	81	87
10.0	56	60	65	66	62	68	75	77	69	76	86	90
12.5	59	63	66	67	67	71	76	78	75	81	88	91
15.0	62	64	66	67	70	74	77	79	79	84	90	92

TABLE H-12 (1,1,1,1,45 DEGREES) (continued)

TARGET ERROR = 2 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	10	11	14	17	11	12	15	19	12	13	16	20
1.0	17	18	22	26	19	21	26	30	21	22	28	34
2.5	28	30	33	34	35	37	43	47	39	42	50	56
5.0	35	35	36	37	47	49	52	54	57	59	65	69
7.5	36	37	37	38	52	53	54	55	65	67	70	72
10.0	37	37	38	38	54	54	55	56	69	70	72	74
12.5	37	37	38	38	55	55	56	56	71	72	73	74
15.0	38	38	38	38	55	56	56	56	72	73	74	75

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	14	14	16	19	15	16	18	21	15	16	19	22
1.0	19	20	24	27	21	23	27	32	23	24	29	35
2.5	31	32	35	38	36	38	44	49	40	43	51	57
5.0	38	39	40	41	49	51	54	56	58	61	66	70
7.5	40	40	41	42	54	55	57	58	66	68	72	74
10.0	41	41	42	42	56	57	58	59	71	72	74	76
12.5	41	42	42	42	57	58	59	59	73	74	75	76
15.0	42	42	42	42	58	58	59	59	74	75	76	77

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	20	21	22	24	22	22	24	26	23	23	25	27
1.0	24	25	28	32	26	27	31	35	27	29	33	38
2.5	35	37	42	45	39	42	48	53	43	46	53	60
5.0	45	47	49	51	54	56	60	63	61	64	70	75
7.5	49	50	51	52	60	61	64	66	71	73	77	80
10.0	51	51	52	53	63	64	66	67	76	77	80	82
12.5	52	52	53	53	65	65	66	67	78	79	81	83
15.0	52	52	53	53	66	66	67	67	80	81	82	83

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	28	29	30	29	30	31	32	31	31	32	34
1.0	31	31	34	38	32	33	36	40	34	35	38	42
2.5	41	43	49	54	44	46	53	59	47	50	57	65
5.0	54	56	60	63	60	62	68	72	65	69	76	82
7.5	60	62	64	66	68	70	74	76	76	79	84	88
10.0	63	64	66	67	72	74	76	78	83	85	88	91
12.5	65	65	67	67	75	76	78	79	86	88	90	92
15.0	66	66	67	67	76	77	78	79	88	90	91	93

TABLE H-12 (1,1,1,1,45 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	14	14	16	18	15	16	18	21	16	17	19	22
1.0	22	22	25	27	25	26	29	33	28	29	32	37
2.5	32	33	34	35	42	43	46	49	49	51	55	59
5.0	36	36	37	37	52	52	53	54	65	65	68	70
7.5	37	37	37	38	54	55	55	56	70	70	72	73
10.0	38	38	38	38	55	55	56	56	72	73	73	74
12.5	38	38	38	38	56	56	56	56	73	74	74	75
15.0	38	38	38	38	56	56	56	56	74	74	75	75

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	18	20	18	18	20	23	19	19	21	24
1.0	23	24	26	29	27	27	30	34	29	30	33	38
2.5	35	36	37	39	44	45	48	51	50	51	56	61
5.0	40	40	41	41	54	54	56	57	66	67	70	72
7.5	41	41	42	42	57	57	58	58	72	72	74	75
10.0	42	42	42	42	58	58	59	59	74	75	75	76
12.5	42	42	42	42	59	59	59	59	75	76	76	77
15.0	42	42	42	42	59	59	59	59	76	76	77	77

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	22	23	25	24	24	25	27	25	25	27	29
1.0	28	28	31	34	30	31	34	37	32	33	36	41
2.5	41	42	44	47	47	49	52	56	53	54	59	64
5.0	49	49	51	51	60	60	62	64	70	71	74	77
7.5	51	52	52	52	64	64	65	66	77	78	79	81
10.0	52	52	53	53	66	66	66	67	80	80	81	82
12.5	53	53	53	53	66	67	67	67	81	82	82	83
15.0	53	53	53	53	67	67	67	68	82	83	83	83

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	29	30	31	30	31	32	33	32	32	33	35
1.0	34	34	37	40	36	36	39	42	38	38	41	45
2.5	48	49	53	56	52	54	58	62	56	58	63	69
5.0	60	61	62	64	68	69	71	74	76	77	81	84
7.5	64	64	65	66	74	74	76	77	84	85	87	89
10.0	66	66	66	67	76	77	78	78	88	89	90	91
12.5	66	67	67	67	78	78	78	79	90	91	92	93
15.0	67	67	67	68	78	78	79	79	91	92	92	93

TABLE H-12 (1,1,1,1,45 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	17	17	18	20	19	19	21	23	20	21	22	25
1.0	25	26	27	29	30	31	33	36	33	34	37	40
2.5	34	35	35	36	47	47	49	50	56	57	59	62
5.0	37	37	37	37	54	54	54	55	69	69	70	71
7.5	38	38	38	38	55	55	56	56	72	72	73	74
10.0	38	38	38	38	56	56	56	56	74	74	74	74
12.5	38	38	38	38	56	56	56	56	74	74	75	75
15.0	38	38	38	38	56	56	57	57	75	75	75	75

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	19	20	22	21	21	23	25	22	23	24	26
1.0	27	28	29	31	31	32	34	37	34	35	38	41
2.5	38	38	39	39	48	49	51	52	57	58	61	64
5.0	41	41	41	41	56	56	57	58	70	71	72	73
7.5	42	42	42	42	58	58	58	59	74	74	75	76
10.0	42	42	42	42	59	59	59	59	76	76	76	77
12.5	42	42	42	42	59	59	59	59	76	77	77	77
15.0	42	42	42	42	59	59	59	59	77	77	77	77

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	25	26	26	26	27	29	27	27	29	31
1.0	31	32	34	36	35	35	37	40	37	38	40	44
2.5	45	45	47	48	53	54	56	58	60	61	64	67
5.0	51	51	51	52	63	63	64	65	75	76	77	79
7.5	52	52	52	53	66	66	66	67	80	80	81	82
10.0	53	53	53	53	67	67	67	67	82	82	82	83
12.5	53	53	53	53	67	67	67	68	83	83	83	83
15.0	53	53	53	53	67	67	68	68	83	83	84	84

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	31	31	33	32	32	33	34	33	34	35	36
1.0	37	38	39	42	40	40	42	45	42	42	45	48
2.5	53	54	56	58	59	60	62	65	64	65	69	73
5.0	63	63	64	65	72	72	74	75	82	83	85	87
7.5	66	66	66	67	76	76	77	78	88	88	90	91
10.0	67	67	67	67	78	78	78	79	91	91	92	92
12.5	67	67	67	68	79	79	79	79	92	92	93	93
15.0	67	67	68	68	79	79	79	80	93	93	93	93

TABLE H-12 (1,1,1,1,45 DEGREES) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	21	22	22	22	24	25	24	24	26	28
1.0	28	28	29	30	34	35	36	38	38	39	41	44
2.5	36	36	36	36	50	50	51	52	61	61	63	65
5.0	37	37	37	38	55	55	55	55	71	71	72	72
7.5	38	38	38	38	56	56	56	56	73	73	74	74
10.0	38	38	38	38	56	56	56	56	74	74	75	75
12.5	38	38	38	38	56	56	56	57	75	75	75	75
15.0	38	38	38	38	57	57	57	57	75	75	75	75

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	21	21	22	24	24	24	25	27	25	26	27	29
1.0	30	30	31	33	35	36	37	40	39	40	42	45
2.5	39	39	40	40	52	52	53	54	62	63	64	66
5.0	41	41	42	42	57	57	58	58	73	73	73	74
7.5	42	42	42	42	59	59	59	59	75	75	76	76
10.0	42	42	42	42	59	59	59	59	76	76	77	77
12.5	42	42	42	42	59	59	59	59	77	77	77	77
15.0	42	42	42	42	59	59	59	60	77	77	77	77

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	26	26	27	28	28	28	29	30	30	30	31	33
1.0	35	35	36	38	39	39	41	43	42	43	44	47
2.5	47	48	48	49	57	57	58	60	66	66	68	70
5.0	52	52	52	52	65	65	65	66	78	78	79	80
7.5	53	53	53	53	66	66	67	67	81	81	82	82
10.0	53	53	53	53	67	67	67	67	83	83	83	83
12.5	53	53	53	53	67	68	68	68	83	83	83	84
15.0	53	53	53	53	68	68	68	68	84	84	84	84

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	32	33	34	34	34	35	36	35	36	36	38
1.0	41	41	42	44	43	44	45	48	46	47	48	51
2.5	57	57	59	60	64	64	66	68	71	71	73	76
5.0	65	65	65	66	75	75	75	76	86	86	87	88
7.5	66	66	67	67	77	78	78	78	90	90	91	91
10.0	67	67	67	67	79	79	79	79	92	92	92	93
12.5	67	68	68	68	79	79	79	79	93	93	93	93
15.0	68	68	68	68	79	79	80	80	93	93	93	94

TABLE H-13 (1,1,1,1,75 DEGREES)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	6	8	12	15	6	8	13	17	6	8	13	18
1.0	11	14	19	22	12	15	22	28	12	16	24	31
2.5	21	23	26	28	25	29	35	39	27	33	42	48
5.0	26	28	29	29	35	38	41	43	42	46	52	55
7.5	28	29	29	30	39	41	43	44	49	52	56	57
10.0	29	29	30	30	41	43	44	44	53	55	57	58
12.5	29	29	30	30	42	43	44	44	55	56	58	59
15.0	29	29	30	30	43	44	44	44	56	57	58	59

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	11	12	15	18	12	13	16	20	12	13	17	20
1.0	14	17	21	24	15	18	24	29	15	18	26	32
2.5	23	25	29	31	26	30	37	40	28	34	43	49
5.0	29	30	32	32	37	40	43	45	42	47	54	57
7.5	31	32	32	33	41	43	45	46	50	53	57	59
10.0	32	32	33	33	43	45	46	46	54	56	59	60
12.5	32	33	33	33	44	45	46	46	56	58	60	60
15.0	33	33	33	33	45	46	46	47	57	59	60	60

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	20	21	23	20	21	23	25	20	21	23	26
1.0	21	22	26	29	22	24	28	33	22	25	30	36
2.5	27	30	35	37	30	34	41	45	32	37	46	52
5.0	35	37	39	40	40	44	48	50	45	50	57	61
7.5	38	39	41	41	46	48	51	52	53	57	62	64
10.0	39	40	41	41	48	50	52	53	57	60	63	65
12.5	40	41	41	42	50	51	52	53	60	62	64	65
15.0	41	41	42	42	51	52	53	53	62	63	65	66

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	27	27	29	30	28	29	30	32	29	29	31	33
1.0	28	29	32	36	29	31	34	38	30	32	36	41
2.5	33	36	42	45	35	39	46	51	37	42	51	57
5.0	41	44	49	51	45	50	55	58	49	55	63	67
7.5	46	48	51	52	52	55	59	61	58	62	68	71
10.0	49	50	52	53	55	58	60	62	63	66	70	72
12.5	50	51	52	53	58	59	61	62	66	69	71	73
15.0	51	52	53	53	59	60	62	62	68	70	72	73

TABLE H-13 (1,1,1,1,75 DEGREES) (continued)

TARGET ERROR = 2 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	10	11	14	17	11	12	15	19	11	12	16	20
1.0	17	18	21	23	19	21	26	30	20	22	28	33
2.5	26	26	28	28	34	35	38	40	39	42	46	50
5.0	29	29	29	29	41	41	43	43	51	53	55	56
7.5	29	29	29	30	43	43	44	44	55	56	57	58
10.0	29	30	30	30	43	44	44	44	57	57	58	58
12.5	30	30	30	30	44	44	44	44	58	58	58	59
15.0	30	30	30	30	44	44	44	44	58	58	59	59

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	13	14	17	19	14	15	18	21	14	15	18	22
1.0	19	20	23	25	21	23	27	31	22	24	29	34
2.5	28	29	30	31	35	37	40	42	40	42	47	51
5.0	32	32	32	33	43	43	45	45	53	54	56	58
7.5	32	33	33	33	45	45	46	46	57	57	59	60
10.0	33	33	33	33	46	46	46	46	58	59	60	60
12.5	33	33	33	33	46	46	46	47	59	60	60	60
15.0	33	33	33	33	46	46	47	47	60	60	60	61

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	20	21	22	24	21	22	24	26	22	22	25	27
1.0	24	25	28	30	26	27	31	35	27	28	33	38
2.5	33	35	37	38	39	40	44	47	43	45	50	55
5.0	39	39	40	41	48	48	50	51	56	57	60	62
7.5	40	41	41	41	50	51	52	52	61	62	63	64
10.0	41	41	41	42	52	52	52	53	63	64	64	65
12.5	41	41	42	42	52	52	53	53	64	64	65	65
15.0	42	42	42	42	53	53	53	53	65	65	65	66

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	28	28	29	31	29	29	31	32	30	30	32	34
1.0	31	31	34	37	32	33	36	40	33	35	38	42
2.5	40	41	44	47	43	45	50	53	47	49	55	59
5.0	48	49	50	51	54	55	58	59	61	63	66	69
7.5	51	51	52	52	58	59	60	61	67	68	70	71
10.0	52	52	52	53	60	61	61	62	70	70	72	72
12.5	52	52	53	53	61	61	62	62	71	72	72	73
15.0	53	53	53	53	62	62	62	62	72	72	73	73

TABLE H-13 (1,1,1,1,75 DEGREES) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGR IN SECONDS				SIGR = 15 METERS SIGR IN SECONDS				SIGR = 20 METERS SIGR IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	14	14	16	18	15	16	18	21	15	16	19	22
1.0	21	22	23	25	25	26	29	32	27	29	33	37
2.5	28	28	28	29	38	39	40	41	47	48	50	52
5.0	29	29	29	29	43	43	43	44	55	55	56	57
7.5	30	30	30	30	44	44	44	44	57	57	58	58
10.0	30	30	30	30	44	44	44	44	58	58	59	59
12.5	30	30	30	30	44	44	44	44	59	59	59	59
15.0	30	30	30	30	44	44	44	44	59	59	59	59

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGR IN SECONDS				SIGR = 15 METERS SIGR IN SECONDS				SIGR = 20 METERS SIGR IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	16	17	18	20	17	18	20	23	18	19	21	24
1.0	23	24	25	27	27	28	30	33	29	30	34	38
2.5	30	31	31	32	40	40	42	43	48	49	51	53
5.0	32	32	33	33	45	45	45	46	57	57	58	59
7.5	33	33	33	33	46	46	46	46	59	59	60	60
10.0	33	33	33	33	46	46	46	47	60	60	60	60
12.5	33	33	33	33	46	46	47	47	60	60	60	61
15.0	33	33	33	33	47	47	47	47	60	61	61	61

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGR IN SECONDS				SIGR = 15 METERS SIGR IN SECONDS				SIGR = 20 METERS SIGR IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	22	22	24	25	23	24	25	27	24	25	26	29
1.0	28	28	30	32	30	31	34	37	32	33	37	40
2.5	37	37	38	39	44	45	47	48	51	52	54	57
5.0	40	40	41	41	50	51	51	52	61	61	62	63
7.5	41	41	41	42	52	52	52	53	64	64	64	65
10.0	41	42	42	42	53	53	53	53	65	65	65	65
12.5	42	42	42	42	53	53	53	53	65	65	66	66
15.0	42	42	42	42	53	53	53	53	65	66	66	66

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGR IN SECONDS				SIGR = 15 METERS SIGR IN SECONDS				SIGR = 20 METERS SIGR IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	29	30	32	30	31	32	33	31	32	33	35
1.0	34	34	36	38	36	36	39	42	37	38	41	45
2.5	45	45	47	48	50	51	53	55	55	56	59	62
5.0	50	51	51	52	58	58	59	60	67	67	69	70
7.5	52	52	52	53	61	61	61	62	70	71	71	72
10.0	53	53	53	53	61	62	62	62	72	72	73	73
12.5	53	53	53	53	62	62	62	62	73	73	73	73
15.0	53	53	53	53	62	62	62	63	73	73	73	74

TABLE H-13 (1,1,1,1,75 DEGREES) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	17	17	18	20	19	19	21	23	19	20	22	25
1.0	24	24	25	26	30	30	32	34	33	34	37	40
2.5	29	29	29	29	41	41	41	42	51	51	53	54
5.0	29	29	30	30	43	43	44	44	57	57	57	58
7.5	30	30	30	30	44	44	44	44	58	58	58	59
10.0	30	30	30	30	44	44	44	44	59	59	59	59
12.5	30	30	30	30	44	44	44	44	59	59	59	59
15.0	30	30	30	30	44	44	44	44	59	59	59	59

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	19	20	22	20	21	23	25	21	22	24	27
1.0	26	26	27	28	31	32	33	35	34	35	38	41
2.5	31	32	32	32	42	43	43	44	52	53	54	55
5.0	33	33	33	33	46	46	46	46	58	58	59	59
7.5	33	33	33	33	46	46	46	46	60	60	60	60
10.0	33	33	33	33	47	47	47	47	60	60	60	61
12.5	33	33	33	33	47	47	47	47	61	61	61	61
15.0	33	33	33	33	47	47	47	47	61	61	61	61

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	24	25	26	25	26	27	29	27	27	28	31
1.0	31	31	32	34	34	35	37	39	37	38	41	43
2.5	39	39	39	40	47	48	48	49	55	56	57	59
5.0	41	41	41	41	52	52	52	52	63	63	64	64
7.5	41	42	42	42	53	53	53	53	65	65	65	65
10.0	42	42	42	42	53	53	53	53	65	65	65	66
12.5	42	42	42	42	53	53	53	53	66	66	66	66
15.0	42	42	42	42	53	53	53	53	66	66	66	66

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS				SIGR = 15 METERS				SIGR = 20 METERS			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	31	31	33	32	32	33	35	33	33	35	36
1.0	37	37	39	40	39	40	42	44	42	43	45	48
2.5	47	48	49	49	54	54	55	57	60	61	63	65
5.0	52	52	52	52	60	60	61	61	69	70	70	71
7.5	53	53	53	53	61	62	62	62	72	72	72	73
10.0	53	53	53	53	62	62	62	62	73	73	73	73
12.5	53	53	53	53	62	62	62	63	73	73	73	74
15.0	53	53	53	53	62	62	63	63	73	73	74	74

TABLE H-13 (1,1,1,1,75 DEGREES) (continued)

TARGET ERROR = 5 SECONDS

GPS ERROR = 1 METER

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	19	19	20	21	22	22	24	26	23	24	26	28
1.0	26	26	26	27	33	34	35	36	38	39	40	43
2.5	29	29	29	29	42	42	42	43	53	54	54	55
5.0	30	30	30	30	44	44	44	44	58	58	58	58
7.5	30	30	30	30	44	44	44	44	59	59	59	59
10.0	30	30	30	30	44	44	44	44	59	59	59	59
12.5	30	30	30	30	44	44	44	44	59	59	59	59
15.0	30	30	30	30	44	44	44	44	59	59	59	59

GPS ERROR = 5 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	21	21	22	23	24	24	25	27	25	25	27	29
1.0	28	28	28	29	34	35	36	37	39	40	41	44
2.5	32	32	32	32	44	44	44	45	55	55	56	56
5.0	33	33	33	33	46	46	46	46	59	59	60	60
7.5	33	33	33	33	46	46	47	47	60	60	60	60
10.0	33	33	33	33	47	47	47	47	61	61	61	61
12.5	33	33	33	33	47	47	47	47	61	61	61	61
15.0	33	33	33	33	47	47	47	47	61	61	61	61

GPS ERROR = 10 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	26	26	27	28	28	28	29	31	29	30	31	33
1.0	33	33	34	35	38	38	40	41	42	42	44	46
2.5	40	40	40	40	49	49	50	50	59	59	60	61
5.0	41	41	41	41	52	52	52	53	64	64	64	65
7.5	42	42	42	42	53	53	53	53	65	65	65	65
10.0	42	42	42	42	53	53	53	53	66	66	66	66
12.5	42	42	42	42	53	53	53	53	66	66	66	66
15.0	42	42	42	42	53	53	53	53	66	66	66	66

GPS ERROR = 15 METERS

DIST	SIGR = 10 METERS SIGA IN SECONDS				SIGR = 15 METERS SIGA IN SECONDS				SIGR = 20 METERS SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	32	32	33	34	34	34	35	36	35	35	36	38
1.0	39	40	41	42	43	43	45	46	46	46	48	50
2.5	49	49	50	50	56	57	57	58	64	64	65	67
5.0	52	52	52	53	61	61	61	61	71	71	71	72
7.5	53	53	53	53	62	62	62	62	73	73	73	73
10.0	53	53	53	53	62	62	62	62	73	73	73	73
12.5	53	53	53	53	62	62	63	63	73	74	74	74
15.0	53	53	53	53	63	63	63	63	74	74	74	74

TABLE H-14 (2,2,15 DEG,30 DEG,45 DEG)

TARGET ERROR = 1 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	34	46	79	114	18	25	42	60	13	18	30	44
1.0	65	91	156	227	34	48	83	120	25	35	61	88
2.5	159	225	390	566	84	119	207	300	62	87	151	219
5.0	318	450	779	1132	169	238	413	600	123	174	302	438
7.5	477	675	1169	1698	253	358	619	900	184	261	452	657
10.0	636	900	1558	2264	337	477	826	1199	246	348	603	876
12.5	795	1124	1948	2830	421	596	1032	1499	307	435	754	1095
15.0	954	1350	2338	3396	505	715	1238	1799	369	522	905	1314

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	62	70	95	125	33	37	50	66	24	27	37	49
1.0	83	105	165	233	44	56	87	123	32	41	64	90
2.5	168	231	393	569	89	123	208	301	65	90	152	220
5.0	323	453	781	1133	171	240	414	600	125	175	302	439
7.5	480	677	1170	1699	254	359	620	900	185	262	453	657
10.0	638	901	1599	2265	338	477	826	1200	247	349	603	876
12.5	797	1126	1949	2831	422	596	1032	1500	308	436	754	1095
15.0	956	1351	2338	3397	506	715	1239	1799	369	523	905	1314

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	112	116	133	156	59	62	70	83	43	45	51	60
1.0	125	140	189	250	66	74	100	133	48	54	73	97
2.5	192	239	404	576	102	132	214	305	74	96	156	223
5.0	336	462	787	1137	178	245	417	602	130	179	304	440
7.5	489	683	1174	1702	259	362	622	901	189	264	454	658
10.0	645	906	1562	2267	342	480	827	1201	249	351	605	877
12.5	802	1130	1951	2832	425	598	1033	1500	310	437	755	1096
15.0	960	1354	2340	3398	508	717	1240	1800	371	524	906	1315

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	164	167	179	197	87	88	95	104	63	64	69	76
1.0	173	184	224	278	92	98	119	147	67	71	87	107
2.5	226	276	421	588	120	146	223	312	87	107	163	228
5.0	356	478	796	1144	189	253	421	606	138	185	308	443
7.5	504	694	1180	1706	267	367	625	904	194	268	457	660
10.0	656	914	1567	2270	347	484	830	1202	253	354	606	878
12.5	811	1136	1955	2835	430	602	1035	1502	313	440	756	1097
15.0	968	1359	2343	3400	512	720	1241	1801	374	526	907	1316

TABLE H-14 (2,2,15 DEG,30 DEG,45 DEG) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	56	65	91	122	30	34	48	65	22	25	35	47
1.0	111	128	180	244	59	68	96	129	43	49	70	94
2.5	276	318	450	609	146	169	238	323	106	123	174	236
5.0	551	636	890	1218	292	337	477	645	212	246	348	472
7.5	827	954	1350	1827	437	505	715	968	319	369	522	707
10.0	1102	1272	1800	2437	583	674	953	1291	425	491	696	943
12.5	1377	1591	2249	3046	729	842	1191	1613	531	614	870	1179
15.0	1653	1909	2699	3655	875	1011	1430	1936	637	737	1044	1415

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	77	83	105	133	41	44	56	71	30	32	41	52
1.0	123	138	188	250	65	73	99	132	47	53	73	97
2.5	281	323	453	612	149	171	240	324	108	125	175	237
5.0	554	638	901	1219	293	338	477	646	213	247	349	472
7.5	828	956	1351	1828	438	506	715	968	319	369	523	708
10.0	1103	1274	1800	2437	584	674	954	1291	425	492	697	943
12.5	1378	1591	2250	3046	730	843	1192	1614	531	615	871	1179
15.0	1654	1909	2700	3655	875	1011	1430	1936	637	737	1045	1415

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	121	125	140	162	64	66	74	86	46	48	54	63
1.0	154	166	209	266	81	88	111	141	59	64	81	103
2.5	296	336	462	619	156	178	245	328	114	130	179	239
5.0	561	645	906	1223	297	342	480	648	216	249	351	473
7.5	833	960	1354	1831	441	508	717	970	321	371	524	708
10.0	1107	1277	1803	2439	586	676	955	1292	427	493	698	944
12.5	1382	1594	2252	3047	731	844	1193	1614	533	616	872	1179
15.0	1656	1912	2701	3656	877	1012	1431	1937	638	738	1045	1415

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	170	173	184	202	90	92	98	107	65	67	71	78
1.0	195	205	241	292	103	109	128	155	75	79	93	113
2.5	319	356	478	630	169	189	253	334	123	138	185	244
5.0	574	656	914	1229	304	347	484	651	221	253	354	476
7.5	842	968	1359	1834	446	512	720	972	325	374	526	710
10.0	1114	1283	1807	2442	589	679	957	1293	429	495	699	945
12.5	1387	1599	2255	3050	734	846	1195	1616	535	617	873	1180
15.0	1661	1915	2704	3658	879	1014	1432	1938	640	740	1046	1416

TABLE H-14 (2,2,15 DEG,30 DEG,45 DEG) (continued)

TARGET ERROR = 3 SECONDS

GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	81	87	108	135	43	46	57	72	31	34	42	52
1.0	161	173	214	270	85	91	114	143	62	67	83	105
2.5	400	431	536	675	212	228	284	358	154	166	207	261
5.0	801	861	1071	1350	424	456	567	715	308	332	414	522
7.5	1201	1292	1606	2024	636	684	851	1072	463	498	621	783
10.0	1601	1723	2142	2699	847	912	1134	1430	617	665	828	1044
12.5	2001	2153	2677	3374	1059	1140	1418	1787	771	831	1035	1306
15.0	2401	2584	3213	4049	1271	1368	1701	2145	925	997	1242	1567

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	96	101	120	145	51	54	63	77	37	39	46	56
1.0	169	180	221	275	89	96	117	146	65	70	85	107
2.5	404	434	538	677	214	230	285	359	156	167	208	262
5.0	802	863	1072	1351	425	457	568	715	309	333	415	523
7.5	1202	1293	1607	2025	636	685	851	1073	463	499	621	784
10.0	1602	1724	2142	2700	848	912	1135	1430	617	665	828	1045
12.5	2002	2585	3213	4049	1059	1140	1418	1787	771	831	1035	1306
15.0	2402	2585	3213	4049	1271	1368	1702	2145	925	997	1242	1562

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	134	138	152	172	71	73	80	91	52	53	59	67
1.0	193	203	240	290	102	107	127	154	74	78	93	112
2.5	414	444	546	683	219	235	289	362	160	171	211	264
5.0	808	868	1076	1354	427	460	570	717	311	335	416	524
7.5	1206	1297	1610	2027	638	686	853	1074	464	500	622	784
10.0	1605	1726	2144	2701	849	914	1136	1431	618	666	829	1045
12.5	2004	2156	2679	3376	1061	1141	1419	1788	772	832	1036	1306
15.0	2404	2586	3214	4050	1272	1369	1702	2145	926	998	1243	1567

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	180	182	193	210	95	97	102	111	69	70	75	81
1.0	227	236	268	314	120	125	142	166	87	91	103	121
2.5	431	460	559	694	228	243	296	367	166	177	216	268
5.0	816	876	1083	1359	432	464	574	720	315	338	419	526
7.5	1211	1302	1614	2031	641	689	855	1076	467	502	624	786
10.0	1609	1730	2148	2704	852	916	1137	1432	620	667	830	1046
12.5	2008	2159	2682	3378	1063	1143	1420	1789	773	833	1037	1307
15.0	2407	2589	3217	4052	1274	1371	1703	2146	927	999	1243	1568

TABLE H-14 (2,2,15 DEG,30 DEG,45 DEG) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	106	111	128	152	56	59	68	80	41	43	49	59
1.0	211	221	255	303	112	117	135	161	81	85	98	117
2.5	528	551	636	757	279	292	337	401	203	212	246	293
5.0	1055	1102	1272	1515	558	583	674	802	406	425	491	586
7.5	1582	1653	1909	2272	837	875	1011	1203	610	637	737	878
10.0	2110	2204	2545	3029	1117	1166	1347	1604	813	849	983	1171
12.5	2637	2755	3181	3786	1396	1458	1684	2005	1016	1062	1228	1464
15.0	3165	3306	3817	4543	1675	1750	2021	2406	1219	1274	1474	1757

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	118	122	138	161	63	65	73	85	46	47	53	62
1.0	218	227	260	308	115	120	138	163	84	87	100	119
2.5	530	554	638	759	281	293	338	402	204	213	247	294
5.0	1056	1103	1274	1515	559	584	674	803	407	425	492	586
7.5	1583	1654	1909	2272	838	875	1011	1203	610	637	737	879
10.0	2111	2204	2545	3029	1117	1167	1348	1604	813	850	983	1171
12.5	2638	2755	3181	3786	1396	1458	1684	2005	1016	1062	1229	1464
15.0	3165	3306	3817	4544	1675	1750	2021	2406	1219	1274	1474	1757

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	150	154	166	186	80	81	88	98	58	59	64	72
1.0	237	245	276	321	125	130	146	170	91	94	107	124
2.5	538	561	645	765	285	297	342	405	207	216	249	296
5.0	1060	1107	1277	1518	561	586	676	804	408	427	493	587
7.5	1586	1656	1912	2274	839	877	1012	1204	611	638	738	879
10.0	2113	2206	2547	3031	1118	1168	1349	1605	814	850	984	1172
12.5	2640	2757	3183	3788	1397	1459	1685	2006	1017	1063	1229	1465
15.0	3167	3307	3819	4545	1676	1751	2022	2407	1220	1275	1475	1757

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	192	195	205	221	102	103	109	117	74	75	79	85
1.0	265	273	301	343	140	144	159	182	102	105	116	133
2.5	551	574	656	774	292	304	347	410	212	221	253	299
5.0	1067	1114	1283	1523	565	589	679	807	411	429	495	589
7.5	1591	1661	1915	2277	842	879	1014	1206	613	640	740	881
10.0	2116	2210	2550	3033	1120	1170	1350	1606	815	852	985	1173
12.5	2642	2759	3185	3790	1398	1460	1686	2007	1018	1064	1230	1465
15.0	3169	3310	3820	4546	1677	1752	2023	2408	1220	1276	1475	1758

TABLE H-14 (2,2,15 DEG,30 DEG,45 DEG) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	132	135	150	171	70	72	79	90	51	52	58	66
1.0	263	270	299	341	139	143	158	181	101	104	115	132
2.5	656	675	746	852	347	357	395	451	253	260	288	329
5.0	1312	1350	1492	1703	694	714	790	902	505	520	576	658
7.5	1967	2024	2238	2555	1041	1071	1185	1353	758	780	864	987
10.0	2623	2699	2984	3406	1388	1428	1580	1804	1010	1040	1152	1316
12.5	3279	3374	3730	4258	1735	1786	1975	2255	1263	1300	1439	1645
15.0	3934	4049	4476	5109	2082	2143	2370	2706	1515	1560	1727	1974

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	142	145	159	179	75	77	84	95	55	56	61	69
1.0	268	275	303	345	142	146	161	183	103	106	117	133
2.5	658	677	745	853	348	358	396	452	253	261	289	330
5.0	1313	1351	1493	1704	695	715	790	902	506	520	576	658
7.5	1968	2025	2239	2555	1041	1072	1185	1353	758	780	864	987
10.0	2624	2700	2984	3407	1388	1429	1580	1804	1010	1040	1152	1316
12.5	3279	3374	3730	4258	1735	1786	1975	2255	1263	1300	1440	1645
15.0	3935	4049	4476	5110	2082	2143	2370	2706	1515	1560	1727	1975

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	169	172	184	201	90	91	97	107	65	66	71	78
1.0	283	290	317	357	150	154	168	189	109	112	122	138
2.5	664	683	754	858	352	362	399	455	256	263	291	332
5.0	1316	1354	1496	1707	696	716	792	904	507	522	577	659
7.5	1970	2027	2241	2557	1043	1073	1186	1354	759	781	865	988
10.0	2625	2701	2986	3408	1389	1430	1581	1805	1011	1041	1152	1317
12.5	3280	3375	3731	4259	1736	1786	1975	2255	1263	1301	1440	1646
15.0	3936	4050	4477	5110	2083	2143	2370	2706	1516	1560	1728	1975

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	202	210	219	234	110	111	116	124	80	81	85	90
1.0	308	314	339	377	163	166	179	199	119	121	131	146
2.5	675	694	763	867	357	367	404	459	260	267	294	335
5.0	1321	1359	1501	1711	699	719	794	906	509	524	579	661
7.5	1974	2031	2244	2560	1045	1075	1188	1356	760	782	866	989
10.0	2628	2704	2988	3410	1391	1431	1582	1806	1012	1042	1153	1318
12.5	3283	3378	3733	4261	1737	1788	1976	2256	1264	1301	1441	1647
15.0	3938	4052	4479	5112	2084	2144	2371	2707	1516	1561	1728	1975

TABLE H-15 (2,2,30 DEG,45 DEG,75 DEG)

TARGET ERROR = 1 SECOND

GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	18	25	42	60	13	18	30	44	10	14	24	35
1.0	34	48	83	120	25	35	61	88	19	28	48	69
2.5	84	119	207	300	62	87	151	219	48	69	119	172
5.0	169	238	413	600	123	174	302	438	96	137	237	344
7.5	253	358	619	900	184	261	452	657	144	206	356	516
10.0	337	477	826	1199	246	348	603	876	192	274	475	688
12.5	421	596	1032	1499	307	435	754	1095	240	343	593	860
15.0	505	715	1238	1799	369	522	905	1314	288	411	712	1032

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	33	37	50	66	24	27	37	49	19	21	29	38
1.0	44	56	87	123	32	41	64	90	25	32	50	71
2.5	89	123	208	301	65	90	152	220	51	70	120	173
5.0	171	240	414	600	125	175	302	439	97	138	238	345
7.5	254	359	620	900	185	262	453	657	145	206	356	517
10.0	338	477	826	1200	247	349	603	876	192	275	475	689
12.5	422	596	1032	1500	308	436	754	1095	240	343	593	861
15.0	506	715	1239	1799	369	523	905	1314	288	412	712	1033

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	59	62	70	83	43	45	51	60	33	36	40	47
1.0	66	74	100	133	48	54	73	97	37	42	58	76
2.5	102	132	214	305	74	96	156	223	57	76	123	175
5.0	178	245	417	602	130	179	304	440	101	141	240	346
7.5	259	362	622	901	189	264	454	658	147	208	358	517
10.0	342	480	827	1201	249	351	605	877	194	276	476	689
12.5	425	598	1033	1500	310	437	755	1096	242	344	594	861
15.0	508	717	1240	1800	371	524	906	1315	289	413	713	1033

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	87	88	95	104	63	64	69	76	48	49	53	59
1.0	92	98	119	147	67	71	87	107	51	55	68	85
2.5	120	146	223	312	87	107	163	228	68	84	129	179
5.0	189	253	421	606	138	185	308	443	107	145	243	348
7.5	267	367	625	904	194	268	457	660	151	211	359	519
10.0	347	484	830	1202	253	354	606	878	198	278	477	690
12.5	430	602	1035	1502	313	440	756	1097	244	346	595	862
15.0	512	720	1241	1801	374	526	907	1316	291	414	714	1034

TABLE H-15 (2,2,30 DEG,45 DEG,75 DEG) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	30	34	48	65	22	25	35	47	17	19	28	37
1.0	59	68	96	129	43	49	70	94	33	39	55	74
2.5	146	169	238	323	106	123	174	236	82	96	137	186
5.0	292	337	477	645	212	246	348	472	164	192	274	372
7.5	437	505	715	968	319	369	522	707	246	288	411	557
10.0	583	674	953	1291	425	491	696	943	328	383	548	743
12.5	729	842	1191	1613	531	614	870	1179	410	479	686	929
15.0	875	1011	1430	1936	637	737	1044	1415	492	575	823	1114

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	41	44	56	71	30	32	41	52	23	25	32	41
1.0	65	73	99	132	47	53	73	97	36	42	57	76
2.5	149	171	240	324	108	125	175	237	83	97	138	187
5.0	293	338	477	646	213	247	349	472	165	192	275	372
7.5	438	506	715	968	319	369	523	708	246	288	412	557
10.0	584	674	954	1291	425	492	697	943	328	384	549	743
12.5	730	843	1192	1614	531	615	871	1179	410	479	686	929
15.0	875	1011	1430	1936	637	737	1045	1415	492	575	823	1115

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	64	66	74	86	46	48	54	63	36	37	42	49
1.0	81	88	111	141	59	64	81	103	46	50	64	81
2.5	156	178	245	328	114	130	179	239	88	101	141	189
5.0	297	342	480	648	216	249	351	473	167	194	276	373
7.5	441	508	717	970	321	371	524	708	248	289	413	558
10.0	586	676	955	1292	427	493	698	944	329	385	549	744
12.5	731	844	1193	1614	533	616	872	1179	411	480	686	929
15.0	877	1012	1431	1937	638	738	1045	1415	493	576	823	1115

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	90	92	98	107	65	67	71	78	50	51	55	61
1.0	103	109	128	155	75	79	93	113	58	61	73	89
2.5	169	189	253	334	123	138	185	244	95	107	145	192
5.0	304	347	484	651	221	253	354	476	171	198	278	375
7.5	446	512	720	972	325	374	526	710	250	291	414	559
10.0	589	679	957	1293	429	495	699	945	331	386	551	745
12.5	734	846	1195	1616	535	617	873	1180	412	482	687	930
15.0	879	1014	1432	1938	640	740	1046	1416	494	577	824	1116

TABLE H-15 (2,2,30 DEG,45 DEG,75 DEG) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	43	46	57	72	31	34	42	52	24	26	33	41
1.0	85	91	114	143	62	67	83	105	48	52	65	82
2.5	212	228	284	358	154	166	207	261	119	129	162	206
5.0	424	456	567	715	308	332	414	522	237	257	325	411
7.5	636	684	851	1072	463	498	621	783	356	386	487	617
10.0	847	912	1134	1430	617	665	828	1044	474	515	649	823
12.5	1059	1140	1418	1787	771	831	1035	1306	593	643	811	1028
15.0	1271	1368	1701	2145	925	997	1242	1567	711	772	974	1234

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	51	54	63	77	37	39	46	56	29	30	36	44
1.0	89	96	117	146	65	70	85	107	50	54	67	84
2.5	214	230	285	359	156	167	208	262	120	130	163	206
5.0	425	457	568	715	309	333	415	523	238	258	325	412
7.5	636	685	851	1073	463	499	621	784	356	386	487	617
10.0	848	912	1135	1430	617	665	828	1045	475	515	649	823
12.5	1059	1140	1418	1787	771	831	1035	1306	593	643	812	1028
15.0	1271	1368	1702	2145	925	997	1242	1562	712	772	974	1234

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	71	73	80	91	52	53	59	67	40	41	45	52
1.0	102	107	127	154	74	78	93	112	57	60	72	88
2.5	219	235	289	362	160	171	211	264	123	133	165	208
5.0	427	460	570	717	311	335	416	524	239	259	326	413
7.5	638	686	853	1074	464	500	622	784	357	387	488	618
10.0	849	914	1136	1431	618	666	829	1045	475	516	650	823
12.5	1061	1141	1419	1788	772	832	1036	1306	594	644	812	1029
15.0	1272	1369	1702	2145	926	998	1243	1567	712	773	974	1234

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	95	97	102	111	69	70	75	81	53	54	58	63
1.0	120	125	142	166	87	91	103	121	67	70	81	95
2.5	228	243	296	367	166	177	216	268	128	137	169	211
5.0	432	464	574	720	315	338	419	526	242	262	328	414
7.5	641	689	855	1076	467	502	624	786	359	389	489	619
10.0	852	916	1137	1432	620	667	830	1046	478	517	651	824
12.5	1063	1143	1420	1789	773	833	1037	1307	594	645	813	1029
15.0	1274	1371	1703	2146	927	999	1243	1568	713	773	975	1235

TABLE H-15 (2,2,30 DEG,45 DEG,75 DEG) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	56	59	68	80	41	43	49	59	31	32	39	46
1.0	112	117	135	161	81	85	98	117	63	66	77	92
2.5	279	292	337	401	203	212	246	293	156	164	192	230
5.0	558	583	674	802	406	425	491	586	312	328	383	460
7.5	837	875	1011	1203	610	637	737	878	468	492	575	690
10.0	1117	1166	1347	1604	813	849	983	1171	624	655	767	920
12.5	1396	1458	1684	2005	1016	1062	1228	1464	780	819	958	1150
15.0	1675	1750	2021	2406	1219	1274	1474	1757	936	983	1150	1380

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	63	65	73	85	46	47	53	62	35	36	42	49
1.0	115	120	138	163	84	87	100	119	64	67	78	93
2.5	281	293	338	402	204	213	247	294	157	165	192	231
5.0	559	584	674	803	407	425	492	586	312	328	384	460
7.5	838	875	1011	1203	610	637	737	879	468	492	575	690
10.0	1117	1167	1348	1604	813	850	983	1171	624	656	767	920
12.5	1396	1458	1684	2005	1016	1062	1229	1464	780	819	958	1150
15.0	1675	1750	2021	2406	1219	1274	1474	1757	936	983	1150	1380

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	80	81	88	98	58	59	64	72	44	46	50	56
1.0	125	130	146	170	91	94	107	124	70	73	83	97
2.5	285	297	342	405	207	216	249	296	159	167	194	232
5.0	561	586	676	804	408	427	493	587	314	329	385	461
7.5	839	877	1012	1204	611	638	738	879	469	493	576	691
10.0	1118	1168	1349	1605	814	850	984	1172	625	656	767	921
12.5	1397	1459	1685	2006	1017	1063	1229	1465	781	820	959	1150
15.0	1676	1751	2022	2407	1220	1275	1475	1757	937	984	1150	1380

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	102	103	109	117	74	75	79	85	57	58	61	66
1.0	140	144	159	182	102	105	116	133	78	81	90	104
2.5	292	304	347	410	212	221	253	299	163	171	198	235
5.0	565	589	679	807	411	429	495	589	316	331	386	463
7.5	842	879	1014	1206	613	640	740	881	470	494	577	692
10.0	1120	1170	1350	1606	815	852	985	1173	626	657	768	921
12.5	1398	1460	1686	2007	1018	1064	1230	1465	781	821	959	1151
15.0	1677	1752	2023	2408	1220	1276	1475	1758	937	984	1151	1381

TABLE H-15 (2,2,30 DEG,45 DEG,75 DEG) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	70	72	79	90	51	52	58	66	39	40	45	52
1.0	139	143	158	181	101	104	115	132	78	80	90	103
2.5	347	357	395	451	253	260	288	329	194	200	224	258
5.0	694	714	790	902	505	520	576	658	388	400	447	515
7.5	1041	1071	1185	1353	758	780	864	987	581	601	671	773
10.0	1388	1428	1580	1804	1010	1040	1152	1316	775	801	895	1030
12.5	1735	1786	1975	2255	1263	1300	1439	1645	969	1001	1118	1288
15.0	2082	2143	2370	2706	1515	1560	1727	1974	1163	1201	1342	1545

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	75	77	84	95	55	56	61	69	42	43	47	54
1.0	142	146	161	183	103	106	117	133	79	82	91	104
2.5	348	358	396	452	253	261	289	330	194	201	224	258
5.0	695	715	790	902	506	520	576	658	388	401	448	515
7.5	1041	1072	1185	1353	758	780	864	987	582	601	671	773
10.0	1388	1429	1580	1804	1010	1040	1152	1316	775	801	895	1030
12.5	1735	1786	1975	2255	1263	1300	1440	1645	969	1001	1118	1288
15.0	2082	2143	2370	2706	1515	1560	1727	1975	1163	1201	1342	1545

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	90	91	97	107	65	66	71	78	50	51	55	61
1.0	150	154	168	189	109	112	122	138	84	86	95	108
2.5	352	362	399	455	256	263	291	332	196	203	226	260
5.0	696	716	792	904	507	522	577	659	389	402	448	516
7.5	1043	1073	1186	1354	759	781	865	988	582	601	672	773
10.0	1389	1430	1581	1805	1011	1041	1152	1317	776	801	895	1031
12.5	1736	1786	1975	2255	1263	1301	1440	1646	969	1001	1119	1288
15.0	2083	2143	2370	2706	1516	1560	1728	1975	1163	1201	1342	1546

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
0.5	110	111	116	124	80	81	85	90	61	62	65	70
1.0	163	166	179	199	119	121	131	146	91	93	101	114
2.5	357	367	404	459	260	267	294	335	200	206	229	262
5.0	699	719	794	906	509	524	579	661	390	403	450	517
7.5	1045	1075	1188	1356	760	782	866	989	583	602	673	774
10.0	1391	1431	1582	1806	1012	1042	1153	1318	777	802	896	1031
12.5	1737	1788	1976	2256	1264	1301	1441	1647	970	1002	1119	1289
15.0	2084	2144	2371	2707	1516	1561	1728	1975	1164	1202	1343	1546

TABLE H-16 (2,2,2,15 DEG,30 DEG,45 DEG)

TARGET ERROR = 1 SECOND

GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	23	30	48	67	12	16	26	36	9	12	19	27
1.0	44	58	94	134	24	31	50	72	18	23	37	53
2.5	108	143	234	334	58	77	126	179	43	57	93	133
5.0	216	286	468	668	116	154	251	359	86	114	187	266
7.5	324	429	702	1002	174	230	377	538	129	171	280	400
10.0	431	572	936	1336	232	307	502	717	172	228	373	533
12.5	539	715	1170	1670	289	384	628	896	215	285	466	666
15.0	647	858	1404	2004	347	460	753	1076	258	342	559	799

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	44	48	61	78	24	26	33	42	18	19	24	31
1.0	58	69	102	139	31	37	55	75	23	28	40	56
2.5	114	148	237	336	61	80	127	181	46	59	95	134
5.0	219	289	470	669	118	155	252	359	87	115	187	267
7.5	326	431	703	1003	175	231	377	538	130	172	280	400
10.0	433	573	937	1337	232	308	503	717	173	228	373	533
12.5	540	716	1171	1671	290	384	628	897	215	285	466	666
15.0	648	859	1405	2005	348	461	754	1076	258	342	560	799

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	79	82	90	103	43	44	48	55	32	33	36	41
1.0	88	96	122	155	47	51	65	83	35	38	49	62
2.5	132	163	247	343	71	87	133	184	53	65	98	137
5.0	229	296	475	673	123	159	255	361	91	118	189	268
7.5	332	436	706	1005	178	234	379	540	133	174	282	401
10.0	438	577	939	1339	235	310	504	718	175	230	374	534
12.5	544	719	1173	1672	292	386	629	897	217	286	467	667
15.0	651	861	1406	2006	350	462	755	1077	260	343	560	800

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	116	118	124	134	63	63	67	72	46	47	50	53
1.0	122	128	149	178	66	69	80	96	49	51	60	71
2.5	157	184	262	355	85	99	141	190	63	73	104	141
5.0	244	309	483	679	131	166	259	364	97	123	192	271
7.5	343	444	712	1009	184	239	382	542	137	177	284	402
10.0	446	584	943	1342	240	313	506	720	178	233	376	535
12.5	551	724	1176	1675	296	389	631	899	220	289	469	668
15.0	657	866	1409	2008	353	465	756	1078	262	345	561	800

TABLE H-16 (2,2,2,15 DEG,30 DEG,45 DEG) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	39	44	58	75	21	24	31	40	16	18	23	30
1.0	78	87	115	149	42	47	62	80	31	35	46	60
2.5	193	216	286	373	104	116	154	200	77	86	114	149
5.0	386	431	572	746	207	232	307	400	154	172	228	297
7.5	579	647	858	1119	311	347	460	601	231	258	342	446
10.0	772	862	1144	1492	415	463	614	801	308	344	456	594
12.5	965	1078	1430	1865	518	579	767	1001	385	430	569	743
15.0	1158	1294	1716	2239	622	695	921	1201	462	516	683	892

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	54	58	69	84	29	31	37	45	22	23	28	34
1.0	86	94	121	154	46	51	65	83	34	38	48	62
2.5	197	219	289	375	106	118	155	201	79	87	115	149
5.0	388	433	573	747	208	232	308	401	155	173	228	298
7.5	580	648	859	1120	312	348	461	601	232	258	342	446
10.0	773	863	1145	1493	415	463	614	801	309	344	456	595
12.5	966	1079	1430	1866	519	579	768	1001	385	430	570	743
15.0	1159	1294	1716	2239	622	695	921	1201	462	516	684	892

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	85	88	96	108	46	47	51	58	34	35	38	43
1.0	109	115	138	169	58	62	74	90	43	46	55	67
2.5	208	229	296	381	112	123	159	205	83	91	118	152
5.0	394	438	577	750	211	235	310	403	157	175	230	299
7.5	584	651	861	1122	314	350	462	602	233	260	343	447
10.0	776	866	1146	1494	417	465	615	802	310	345	457	595
12.5	968	1081	1432	1867	520	580	768	1002	386	431	570	744
15.0	1161	1296	1718	2240	623	696	922	1202	463	517	684	892

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	121	122	128	138	65	66	69	74	48	49	51	55
1.0	138	143	163	189	74	77	87	102	55	57	65	76
2.5	224	244	309	391	121	131	166	210	90	97	123	156
5.0	403	446	584	755	216	240	313	405	161	178	233	301
7.5	590	657	866	1125	317	353	465	604	236	262	345	448
10.0	781	870	1150	1497	419	467	617	803	312	347	458	596
12.5	972	1084	1435	1869	522	582	770	1003	388	432	571	745
15.0	1164	1299	1720	2242	625	697	923	1203	464	518	685	893

TABLE H-16 (2,2,2,15 DEG,30 DEG,45 DEG) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	57	60	71	86	31	32	38	46	23	24	28	34
1.0	113	120	142	172	61	64	76	92	45	48	57	68
2.5	283	299	354	429	152	161	190	230	113	119	141	171
5.0	565	598	709	858	304	321	380	460	226	238	282	342
7.5	848	897	1063	1287	456	481	571	691	339	358	424	513
10.0	1131	1195	1417	1716	607	642	761	921	451	477	565	683
12.5	1413	1494	1772	2145	759	802	951	1151	564	596	706	854
15.0	1696	1793	2126	2574	911	963	1141	1381	677	715	847	1025

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	68	71	81	94	37	38	43	51	27	28	32	38
1.0	119	126	147	176	64	67	79	94	48	50	59	70
2.5	285	301	356	431	153	162	191	231	114	120	142	172
5.0	567	599	710	859	304	322	381	461	226	239	283	342
7.5	849	897	1064	1287	456	482	571	691	339	358	424	513
10.0	1131	1196	1418	1716	608	642	761	921	452	477	565	684
12.5	1414	1495	1772	2145	760	803	951	1151	564	596	706	854
15.0	1697	1793	2126	2574	911	963	1141	1381	677	715	847	1025

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	95	97	104	115	51	52	56	62	38	39	42	46
1.0	136	142	161	188	73	76	87	101	54	57	64	75
2.5	293	308	363	436	157	166	195	234	117	123	145	174
5.0	571	603	713	861	306	324	383	462	228	240	284	343
7.5	851	900	1066	1289	457	483	572	692	340	359	425	513
10.0	1133	1198	1419	1718	609	643	762	922	452	478	566	684
12.5	1415	1496	1773	2146	760	803	952	1152	565	597	707	855
15.0	1698	1795	2127	2575	912	964	1142	1382	678	716	848	1026

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	128	129	135	144	69	69	72	77	51	52	54	57
1.0	161	165	182	207	86	89	98	111	64	66	73	83
2.5	305	320	373	444	164	172	200	239	122	128	149	177
5.0	577	609	718	866	310	327	385	465	230	243	286	345
7.5	856	904	1069	1292	460	485	574	693	342	361	426	515
10.0	1137	1201	1422	1720	611	645	763	923	454	479	567	685
12.5	1418	1498	1775	2148	762	805	953	1153	566	598	707	855
15.0	1700	1797	2129	2576	913	965	1143	1382	678	717	848	1026

TABLE H-16 (2,2,2,15 DEG,30 DEG,45 DEG) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	75	78	87	99	40	42	47	53	30	31	35	40
1.0	150	155	173	198	80	83	93	106	60	62	69	79
2.5	374	386	431	496	201	207	232	266	149	154	172	197
5.0	747	772	862	991	401	415	463	532	298	308	344	395
7.5	1121	1158	1294	1486	602	622	695	798	447	462	516	592
10.0	1495	1544	1725	1982	803	830	926	1064	597	616	688	790
12.5	1868	1930	2156	2477	1004	1037	1158	1330	746	770	859	987
15.0	2242	2316	2587	2973	1204	1244	1389	1595	895	924	1031	1184

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	84	86	94	106	45	46	51	57	34	34	38	42
1.0	154	159	177	202	83	85	95	108	62	64	70	80
2.5	376	388	433	497	202	208	232	267	150	155	173	198
5.0	748	773	863	992	402	415	463	532	299	309	344	395
7.5	1122	1159	1294	1487	603	622	695	798	448	462	516	592
10.0	1495	1545	1725	1982	803	830	926	1064	597	616	688	790
12.5	1869	1931	2156	2478	1004	1037	1158	1330	746	770	860	987
15.0	2242	2317	2587	2973	1204	1244	1389	1596	895	924	1031	1184

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	107	109	115	125	57	58	62	67	43	43	46	50
1.0	168	172	189	213	90	93	101	114	67	69	75	85
2.5	381	394	438	501	205	211	235	269	152	157	175	200
5.0	751	776	866	994	404	417	465	533	300	310	345	396
7.5	1123	1161	1296	1488	604	623	696	799	448	463	517	593
10.0	1496	1546	1726	1983	804	831	927	1064	597	617	688	790
12.5	1870	1932	2157	2478	1004	1038	1158	1330	746	771	860	987
15.0	2243	2318	2588	2974	1205	1245	1390	1596	895	925	1032	1185

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES				ALPHA = 30 DEGREES				ALPHA = 45 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	137	138	143	152	73	74	77	81	55	55	57	61
1.0	188	192	207	229	101	103	111	123	75	77	83	91
2.5	391	403	446	509	210	216	240	273	156	161	178	203
5.0	756	781	870	998	406	419	467	535	302	312	347	397
7.5	1127	1164	1299	1491	605	625	697	800	450	464	518	594
10.0	1499	1549	1729	1985	805	832	928	1065	598	618	689	791
12.5	1872	1934	2159	2480	1005	1039	1159	1331	747	772	861	988
15.0	2245	2319	2590	2975	1206	1246	1390	1597	896	925	1032	1185

TABLE H-16 (2,2,2,15 DEG,30 DEG,45 DEG) (continued)

TARGET ERROR = 5 SECONDS

GPS ERROR = 1 METER

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	93	95	103	114	50	51	55	61	37	38	41	45
1.0	186	190	205	228	100	102	110	122	74	76	82	91
2.5	465	475	513	569	250	255	276	305	186	190	205	227
5.0	930	950	1026	1138	500	511	551	611	371	379	409	453
7.5	1395	1426	1539	1706	750	766	826	916	557	569	614	680
10.0	1860	1901	2052	2275	1000	1021	1102	1221	743	759	818	907
12.5	2326	2376	2565	2844	1249	1276	1377	1527	928	948	1023	1133
15.0	2791	2851	3078	3413	1499	1532	1653	1832	1114	1138	1227	1360

GPS ERROR = 5 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	101	102	110	120	54	55	59	64	40	41	44	48
1.0	190	194	209	231	102	104	112	124	76	77	83	92
2.5	467	477	514	570	251	256	276	306	186	190	205	227
5.0	931	951	1027	1138	500	511	551	611	372	380	409	454
7.5	1396	1426	1539	1707	750	766	827	916	557	569	614	680
10.0	1861	1901	2052	2276	1000	1021	1102	1222	743	759	818	907
12.5	2326	2376	2565	2844	1250	1277	1377	1527	928	948	1023	1134
15.0	2791	2852	3078	3413	1499	1532	1653	1832	1114	1138	1227	1360

GPS ERROR = 10 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	120	122	128	137	65	65	69	74	48	49	51	55
1.0	201	205	219	240	108	110	118	129	80	82	87	96
2.5	471	481	519	574	253	259	279	308	188	192	207	229
5.0	933	954	1029	1140	501	512	552	612	373	381	410	454
7.5	1397	1428	1541	1708	751	767	827	917	558	570	614	681
10.0	1862	1902	2053	2277	1000	1022	1103	1222	743	759	819	907
12.5	2327	2377	2566	2845	1250	1277	1378	1527	929	949	1023	1134
15.0	2792	2852	3079	3414	1500	1532	1653	1832	1114	1138	1228	1360

GPS ERROR = 15 METERS

DIST	ALPHA = 15 DEGREES SIGA IN SECONDS				ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	147	149	154	162	79	80	83	87	59	59	61	64
1.0	218	222	235	255	117	119	126	137	87	89	94	102
2.5	479	489	526	580	257	263	282	312	191	195	210	231
5.0	937	957	1032	1143	504	514	554	614	374	382	412	456
7.5	1400	1430	1543	1710	752	768	829	918	559	571	615	682
10.0	1864	1904	2055	2278	1001	1023	1103	1223	744	760	820	908
12.5	2328	2379	2567	2846	1251	1278	1379	1528	929	949	1024	1134
15.0	2793	2854	3080	3415	1500	1533	1654	1833	1115	1139	1228	1361

TABLE H-17 (2,2,2,30 DEG,45 DEG,75 DEG)

TARGET ERROR = 1 SECOND
GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	12	16	26	36	9	12	19	27	7	10	15	22
1.0	24	31	50	72	18	23	37	53	14	19	30	43
2.5	58	77	126	179	43	57	93	133	35	46	75	108
5.0	116	154	251	359	86	114	187	266	69	92	151	216
7.5	174	230	377	538	129	171	280	400	103	138	226	323
10.0	232	307	502	717	172	228	373	533	138	184	302	431
12.5	289	384	628	896	215	285	466	666	172	229	377	539
15.0	347	460	753	1076	258	342	559	799	207	275	452	647

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	24	26	33	42	18	19	24	31	14	15	20	25
1.0	31	37	55	75	23	28	40	56	18	22	33	45
2.5	61	80	127	181	46	59	95	134	37	48	76	109
5.0	118	155	252	359	87	115	187	267	70	93	151	216
7.5	175	231	377	538	130	172	280	400	104	138	227	324
10.0	232	308	503	717	173	228	373	533	138	184	302	431
12.5	290	384	628	897	215	285	466	666	173	230	377	539
15.0	348	461	754	1076	258	342	560	799	207	276	453	647

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	43	44	48	55	32	33	36	41	25	26	29	33
1.0	47	51	65	83	35	38	49	62	28	31	39	50
2.5	71	87	133	184	53	65	98	137	42	52	80	111
5.0	123	159	255	361	91	118	189	268	73	95	153	217
7.5	178	234	379	540	133	174	282	401	106	140	228	324
10.0	235	310	504	718	175	230	374	534	140	185	303	432
12.5	292	386	629	897	217	286	467	667	174	231	378	540
15.0	350	462	755	1077	260	343	560	800	208	276	453	647

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES				ALPHA = 45 DEGREES				ALPHA = 75 DEGREES			
	SIGA IN SECONDS				SIGA IN SECONDS				SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	63	63	67	72	46	47	50	53	37	38	40	43
1.0	66	69	80	96	49	51	60	71	39	41	48	57
2.5	85	99	141	190	63	73	104	141	50	59	84	114
5.0	131	166	259	364	97	123	192	271	78	99	155	219
7.5	184	239	382	542	137	177	284	402	110	143	229	326
10.0	240	313	506	720	178	233	376	535	143	187	304	433
12.5	296	389	631	899	220	289	469	668	176	232	379	540
15.0	353	465	756	1078	262	345	561	800	210	278	454	648

TABLE H-17 (2,2,2,30 DEG,45 DEG,75 DEG) (continued)

TARGET ERROR = 2 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	21	24	31	40	16	18	23	30	13	14	19	24
1.0	42	47	62	80	31	35	46	60	25	28	37	48
2.5	104	116	154	200	77	86	114	149	62	69	92	120
5.0	207	232	307	400	154	172	228	297	123	138	184	240
7.5	311	347	460	601	231	258	342	446	185	207	275	360
10.0	415	463	614	801	308	344	456	594	246	276	367	480
12.5	518	579	767	1001	385	430	569	743	308	345	459	600
15.0	622	695	921	1201	462	516	683	892	370	414	551	720

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	29	31	37	45	22	23	28	34	17	18	22	27
1.0	46	51	65	83	34	38	48	62	28	30	39	50
2.5	106	118	155	201	79	87	115	149	63	70	93	121
5.0	208	232	308	401	155	173	228	298	124	138	184	240
7.5	312	348	461	601	232	258	342	446	185	207	276	360
10.0	415	463	614	801	309	344	456	595	247	276	367	480
12.5	519	579	768	1001	385	430	570	743	308	345	459	600
15.0	622	695	921	1201	462	516	684	892	370	414	551	720

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	46	47	51	58	34	35	38	43	27	28	31	34
1.0	58	62	74	90	43	46	55	67	35	37	44	54
2.5	112	123	159	205	83	91	118	152	66	73	95	123
5.0	211	235	310	403	157	175	230	299	126	140	185	241
7.5	314	350	462	602	233	260	343	447	186	208	276	361
10.0	417	465	615	802	310	345	457	595	248	277	368	481
12.5	520	580	768	1002	386	431	570	744	309	346	459	601
15.0	623	696	922	1202	463	517	684	892	370	414	551	721

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	65	66	69	74	48	49	51	55	39	39	41	44
1.0	74	77	87	102	55	57	65	76	44	46	52	61
2.5	121	131	166	210	90	97	123	156	72	78	99	126
5.0	216	240	313	405	161	178	233	301	129	143	187	243
7.5	317	353	465	604	236	262	345	448	188	210	278	362
10.0	419	467	617	803	312	347	458	596	249	278	369	482
12.5	522	582	770	1003	388	432	571	745	310	347	460	601
15.0	625	697	923	1203	464	518	685	893	371	415	552	721

TABLE H-17 (2,2,2,30 DEG,45 DEG,75 DEG) (continued)

TARGET ERROR = 3 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	31	32	38	46	23	24	28	34	18	19	23	28
1.0	61	64	76	92	45	48	57	68	36	38	45	55
2.5	152	161	190	230	113	119	141	171	90	95	113	138
5.0	304	321	380	460	226	238	282	342	180	191	227	275
7.5	456	481	571	691	339	358	424	513	271	286	340	413
10.0	607	642	761	921	451	477	565	683	361	382	454	551
12.5	759	802	951	1151	564	596	706	854	451	477	567	688
15.0	911	963	1141	1381	677	715	847	1025	541	573	681	826

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	37	38	43	51	27	28	32	38	22	23	26	30
1.0	64	67	79	94	48	50	59	70	38	40	47	56
2.5	153	162	191	231	114	120	142	172	91	96	114	138
5.0	304	322	381	461	226	239	283	342	181	191	227	276
7.5	456	482	571	691	339	358	424	513	271	287	341	413
10.0	608	642	761	921	452	477	565	684	361	382	454	551
12.5	760	803	951	1151	564	596	706	854	451	477	567	688
15.0	911	963	1141	1381	677	715	847	1025	541	573	681	826

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	51	52	56	62	38	39	42	46	30	31	33	37
1.0	73	76	87	101	54	57	64	75	44	45	52	60
2.5	157	166	195	234	117	123	145	174	93	99	116	140
5.0	306	324	383	462	228	240	284	343	182	192	228	276
7.5	457	483	572	692	340	359	425	513	272	287	341	414
10.0	609	643	762	922	452	478	566	684	362	382	454	551
12.5	760	803	952	1152	565	597	707	855	452	478	568	689
15.0	912	964	1142	1382	678	716	848	1026	542	573	681	826

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	69	69	72	77	51	52	54	57	41	41	43	46
1.0	86	89	98	111	64	66	73	83	51	53	58	66
2.5	164	172	200	239	122	128	149	177	97	102	119	143
5.0	310	327	385	465	230	243	286	345	184	194	230	278
7.5	460	485	574	693	342	361	426	515	273	289	342	415
10.0	611	645	763	923	454	479	567	685	363	383	455	552
12.5	762	805	953	1153	566	598	707	855	452	479	568	689
15.0	913	965	1143	1382	678	717	848	1026	542	574	682	827

TABLE H-17 (2,2,2,30 DEG,45 DEG,75 DEG) (continued)

TARGET ERROR = 4 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	40	42	47	53	30	31	35	40	24	25	28	32
1.0	80	83	93	106	60	62	69	79	48	49	55	64
2.5	201	207	232	266	149	154	172	197	119	123	138	159
5.0	401	415	463	532	298	308	344	395	238	246	276	317
7.5	602	622	695	798	447	462	516	592	357	370	414	476
10.0	803	830	926	1064	597	616	688	790	477	493	551	635
12.5	1004	1037	1158	1330	746	770	859	987	596	616	689	794
15.0	1204	1244	1389	1595	895	924	1031	1184	715	739	827	952

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	45	46	51	57	34	34	38	42	27	28	30	34
1.0	83	85	95	108	62	64	70	80	49	51	57	65
2.5	202	208	232	267	150	155	173	198	120	124	138	159
5.0	402	415	463	532	299	309	344	395	239	247	276	318
7.5	603	622	695	798	448	462	516	592	358	370	414	476
10.0	803	830	926	1064	597	616	688	790	477	493	552	635
12.5	1004	1037	1158	1330	746	770	860	987	596	616	689	794
15.0	1204	1244	1389	1596	895	924	1031	1184	715	739	827	952

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	57	58	62	67	43	43	46	50	34	35	37	40
1.0	90	93	101	114	67	69	75	85	54	55	60	68
2.5	205	211	235	269	152	157	175	200	122	126	140	161
5.0	404	417	465	533	300	310	345	396	240	248	277	318
7.5	604	623	696	799	448	463	517	593	358	370	414	477
10.0	804	831	927	1064	597	617	688	790	477	493	552	635
12.5	1004	1038	1158	1330	746	771	860	987	596	617	690	794
15.0	1205	1245	1390	1596	895	925	1032	1185	715	740	828	953

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	73	74	77	81	55	55	57	61	44	44	46	49
1.0	101	103	111	123	75	77	83	91	60	61	66	73
2.5	210	216	240	273	156	161	178	203	125	129	143	163
5.0	406	419	467	535	302	312	347	397	241	249	278	320
7.5	605	625	697	800	450	464	518	594	359	371	415	478
10.0	805	832	928	1065	598	618	689	791	478	494	553	636
12.5	1005	1039	1159	1331	747	772	861	988	597	617	690	794
15.0	1206	1246	1390	1597	896	925	1032	1185	716	740	828	953

TABLE H-17 (2,2,2,30 DEG,45 DEG,75 DEG) (continued)

TARGET ERROR = 5 SECONDS
GPS ERROR = 1 METER

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	50	51	55	61	37	38	41	45	30	30	33	37
1.0	100	102	110	122	74	76	82	91	59	61	66	73
2.5	250	255	276	305	186	190	205	227	148	152	164	182
5.0	500	511	551	611	371	379	409	453	297	303	328	364
7.5	750	766	826	916	557	569	614	680	445	455	492	546
10.0	1000	1021	1102	1221	743	759	818	907	593	606	655	728
12.5	1249	1276	1377	1527	928	948	1023	1133	742	758	819	910
15.0	1499	1532	1653	1832	1114	1138	1227	1360	890	910	983	1092

GPS ERROR = 5 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	54	55	59	64	40	41	44	48	32	33	35	38
1.0	102	104	112	124	76	77	83	92	61	62	67	74
2.5	251	256	276	306	186	190	205	227	149	152	164	182
5.0	500	511	551	611	372	380	409	454	297	303	328	364
7.5	750	766	827	916	557	569	614	680	445	455	492	546
10.0	1000	1021	1102	1222	743	759	818	907	593	607	656	728
12.5	1250	1277	1377	1527	928	948	1023	1134	742	758	819	910
15.0	1499	1532	1653	1832	1114	1138	1227	1360	890	910	983	1092

GPS ERROR = 10 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	65	65	69	74	48	49	51	55	38	39	41	44
1.0	108	110	118	129	80	82	87	96	64	65	70	77
2.5	253	259	279	308	188	192	207	229	150	154	166	184
5.0	501	512	552	612	373	381	410	454	298	304	329	365
7.5	751	767	827	917	558	570	614	681	446	455	492	547
10.0	1000	1022	1103	1222	743	759	819	907	594	607	656	728
12.5	1250	1277	1378	1527	929	949	1023	1134	742	758	820	910
15.0	1500	1532	1653	1832	1114	1138	1228	1360	890	910	984	1092

GPS ERROR = 15 METERS

DIST	ALPHA = 30 DEGREES SIGA IN SECONDS				ALPHA = 45 DEGREES SIGA IN SECONDS				ALPHA = 75 DEGREES SIGA IN SECONDS			
	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0	0.5	1.0	2.0	3.0
.5	79	80	83	87	59	59	61	64	47	47	49	52
1.0	117	119	126	137	87	89	94	102	70	71	75	82
2.5	257	263	282	312	191	195	210	231	153	156	168	186
5.0	504	514	554	614	374	382	412	456	299	305	330	366
7.5	752	768	829	918	559	571	615	682	446	456	493	547
10.0	1001	1023	1103	1223	744	760	820	908	594	608	657	729
12.5	1251	1278	1379	1528	929	949	1024	1134	742	759	820	911
15.0	1500	1533	1654	1833	1115	1139	1228	1361	891	910	984	1093

Appendix I. Target Location Errors Derived from Range Observations Only

Tabular entries are 99 percent confidence sphere radii in meters derived from 3, 4, or 5 simultaneous range measurements. It is assumed here that a target tracker makes only slant range measurements (Case I) to the target. Errors are functions of target tracker position errors (in meters) listed under GPS. Errors are also functions of slant range errors (in meters) listed under SIGR. The angle ALPHA defines the angular distance between adjacent target trackers. Note that there are no results for ALPHA = 75 degrees in Table I-3. This is because adjacent angles in a pentagon-shaped model must be 72 degrees or less. Finally, the k-values pertain to the degree of correlation among target tracker positions as described in appendix E. Errors are not organized by distance to the target since target errors are independent of slant range in the range only mode of observation.

Tabular entries are 99 percent confidence sphere radii. If other confidence sphere radii are required, then perform the appropriate calculation.

$$50\% \text{ Confidence Sphere Radii} = 0.4566 * S$$

$$90\% \text{ Confidence Sphere Radii} = 0.7423 * S$$

$$95\% \text{ Confidence Sphere Radii} = 0.8300 * S$$

where S is the 99% confidence value in meters.

TABLE I-1. THREE RANGE ONLY TRACKERS

ALPHA = 15 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	150	225	299	150	224	299	150	224	299	150	224	299
5	167	236	308	159	231	304	151	225	300	151	225	299
10	211	269	334	185	249	318	157	229	303	154	227	301
15	269	317	374	221	277	340	165	235	307	159	231	304

ALPHA = 30 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	76	114	152	76	114	152	76	114	152	76	114	152
5	85	120	157	82	118	155	78	116	153	78	115	153
10	108	137	170	96	128	163	85	120	157	83	119	156
15	137	161	190	117	144	176	94	127	162	92	125	161

ALPHA = 45 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	53	79	105	53	79	105	52	79	105	52	79	105
5	59	83	108	57	82	107	55	80	106	55	80	106
10	74	94	117	68	90	114	63	86	110	62	86	110
15	94	111	131	84	103	124	74	94	117	74	94	116

ALPHA = 60 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	42	62	83	41	62	83	41	62	83	41	62	83
5	46	65	85	45	65	85	45	64	84	45	64	84
10	58	74	92	56	72	91	54	71	89	53	71	89
15	74	88	103	70	84	100	66	80	97	65	80	97

ALPHA = 75 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	36	54	71	36	54	71	36	54	71	36	54	71
5	40	56	74	40	56	73	39	56	73	39	56	73
10	50	64	80	50	64	79	49	63	79	49	63	79
15	64	76	89	63	75	88	62	74	87	62	74	87

TABLE 1-2. FOUR RANGE ONLY TRACKERS

ALPHA = 15 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	106	159	212	106	159	212	106	159	212	106	159	212
5	118	167	218	112	164	215	108	160	213	107	160	212
10	150	191	237	132	177	226	113	164	215	112	163	215
15	191	224	265	158	198	242	122	170	220	118	167	218

ALPHA = 30 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	54	81	108	54	81	108	54	81	108	54	81	108
5	61	86	112	59	84	111	57	83	110	57	83	110
10	77	98	121	71	93	117	65	88	114	64	88	114
15	98	115	135	87	106	128	75	97	120	74	96	120

ALPHA = 45 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	38	57	76	38	57	76	38	57	76	38	57	76
5	42	60	78	42	59	78	41	59	77	41	59	77
10	53	68	84	52	67	84	51	66	83	51	66	83
15	68	80	94	66	78	93	63	76	91	63	76	91

ALPHA = 60 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	31	46	62	31	46	62	31	46	62	31	46	62
5	34	49	63	35	49	64	35	49	64	35	49	64
10	44	55	69	45	56	69	46	57	70	46	57	70
15	55	65	77	57	67	78	59	68	79	59	68	80

ALPHA = 75 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	30	45	59	30	45	59	30	45	59	30	45	59
5	33	47	61	34	47	61	34	47	62	34	48	62
10	42	53	66	43	55	67	45	56	68	45	56	68
15	53	63	74	56	65	76	58	67	78	59	67	78

TABLE 1-3. FIVE RANGE ONLY TRACKERS

ALPHA = 15 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	79	119	158	79	118	158	79	118	158	79	118	158
5	88	125	163	85	122	161	81	120	159	81	120	159
10	112	142	176	99	133	169	87	124	162	86	123	161
15	142	167	197	120	149	182	97	131	167	94	129	166

ALPHA = 30 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	41	61	81	41	61	81	41	61	81	41	61	81
5	46	64	84	45	64	84	44	63	83	44	63	83
10	58	73	91	55	72	90	53	70	88	53	70	88
15	73	86	102	69	83	99	65	80	96	65	79	96

ALPHA = 45 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	29	44	58	29	44	58	29	44	58	29	44	58
5	33	46	60	33	46	60	34	47	61	34	47	61
10	41	52	65	43	54	66	44	55	67	45	55	67
15	52	62	73	55	64	75	58	67	77	58	67	77

ALPHA = 60 DEGREES

	k = 0.00			k = 0.50			k = 0.95			k = 0.99		
	SIGR			SIGR			SIGR			SIGR		
GPS	10	15	20	10	15	20	10	15	20	10	15	20
1	26	40	53	27	40	53	27	40	53	27	40	53
5	29	42	54	30	42	55	31	43	55	31	43	55
10	37	47	59	40	50	61	43	52	62	43	52	62
15	47	56	66	52	60	69	57	64	73	57	64	73